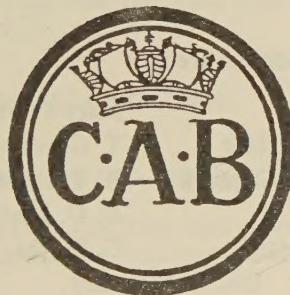


Vol. xvi, Part 3

Nos. 62-164

HELMINTHOLOGICAL ABSTRACTS

incorporating
BIBLIOGRAPHY OF HELMINTHOLOGY
For the Year 1947.



COMMONWEALTH BUREAU OF AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)

Winches Farm Drive, Hatfield Road,
St. Albans, England.

March, 1948

COMMONWEALTH BUREAU OF AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)

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HELMINTHOLOGICAL ABSTRACTS
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BIBLIOGRAPHY OF HELMINTHOLOGY

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HELMINTHOLOGICAL ABSTRACTS

Vol. XVI, Part 3

1947

PRINCIPAL CONTENTS

GENERAL SUBJECTS

- Anthelmintics, 63a, 67a, 68f, 68i, 70a, 76d, 76e, 80a, 93a, 98c, 102d, 132d, 133a, 140a, 142a, 148a, 149a, 151a, 161b, 163a.
Bionomics, 112e, 121a, 144a, 153a, 159c, 164a.
Chemistry, 91b, 91c, 106a.
Control, 64a, 65d, 73a, 86a, 109a, 114a, 118a, 122a, 126a, 129a, 131a, 138a.
Immunology, 79a, 91a, 102a, 102b, 102c, 105a, 130a, 142b, 159a.
Life-Histories, 68d, 75c, 79a, 79b, 100a, 104b, 108a, 112k, 112n, 132c, 139d, 154a, 156a, 160g.
Morphology and Histology, 68e, 72a, 79c, 88d, 117b.
Nematicides (plant eelworm), 64a, 73a, 77a, 101a, 124a.
Pathology, 81a, 88c, 89a, 93b, 99c.
Physiology, 83a, 95a.
Technique, 66a, 68i, 90a, 104d, 105a, 106a, 112i, 126a, 139b, 161c.
Treatment, 80a, 98a, 99b, 100d, 155b.

HOST DISTRIBUTION

Animals of Economic Importance

- Domestic animals, 104d, 115a, 142a, 142b, 145a, 150c, 164g.
Horse, 93b, 93c, 150b, 164f.
Cattle, 70a, 96a, 100b, 100c, 111a, 115a, 134a, 141a, 164d.
Sheep, 70b, 96a, 99c, 100b, 100c, 111a, 132c, 143a, 144a, 153a, 154a, 157a, 163a, 164a.
Goat, 99c, 111a.
Impala, 116a.
Pig, 65d, 75a, 132b.
Poultry, 100a, 132a, 132d, 132g, 149a.
Dog, 75a, 93a, 99b, 100d, 120a.
Game animals, 150a.
Laboratory animals, 63a, 79b, 102b, 112f, 112i.
Man, 66a, 67a, 68b, 68c, 68f, 68g, 68i, 69a, 75a, 76a, 76b, 76d, 76e, 80a, 81a, 82a, 84a, 87a, 94a, 98a, 98c, 102a, 102d, 104e, 104f, 105a, 112g, 112h, 118a, 118b, 122a, 125a, 134a, 139a, 139b, 139c, 147a, 148a, 155b, 161b.
Plants, 64a, 65a, 65b, 65c, 73a, 77a, 85a, 95a, 101a, 104a, 109a, 114a, 121a, 124a, 126a, 129a, 129b, 129c, 130a, 130b, 131a, 137a, 138a, 144b, 159a, 159b, 159c, 162a.
Other Hosts, 135a, 135b, 158a.
Mammals, 70a, 71a, 74b, 74c, 75e, 76c, 88c, 104c, 107a, 112c, 132f, 135a, 160d, 160h.
Birds, 75d, 104b, 104c, 107b, 112l, 132a, 160b, 160e, 160i, 160j.
Reptiles, 74a, 107a, 107b, 112j.
Amphibians, 75b.
Fishes, 89a, 104b, 112a, 128a, 160a, 160c, 160f.
Free-Living Eelworms, 123a.

SYSTEMATICS, NEW SPECIES, etc.

Trematoda, 72a, 74a, 74b, 75b, 89a, 112j, 128a, 160a, 160b, 160c, 160f, 160i.
 Cestoda, 71a, 107b, 112c, 112d, 112 l, 116a, 132e, 160d, 160e, 160g, 160h.
 Nematoda, 74c, 75d, 75e, 104c, 107a, 117a, 132f.
 Acanthocephala, 112a, 112b, 132a, 146a, 160j.

GEOGRAPHICAL DISTRIBUTION

EUROPE

Belgium, 121a, 137a.
 British Isles, 85a, 104b, 104f, 115a,
 154a, 164d.
 Germany, 93a, 93b.
 Holland, 158a, 158b, 158c.
 Sweden, 162a.
 Switzerland, 150a, 150b.

AFRICA, 104c, 104e.

Belgian Congo, 76a, 76b, 76c, 87a.
 East Africa, 86a, 94a.
 Egypt, 118b.
 French West Africa, 88c.
 Liberia, 112h.
 Nigeria, 145a.
 South Africa, 116a, 118c, 155a.
 Southern Rhodesia, 155b.

ASIA

India, 99b, 99c, 152a.
 Indo-China, 75a, 75c.
 Japan, 68b.
 Java, 112g, 159a.
 Palestine, 104c, 111a.
 Philippines, 68b, 160c.

AUSTRALASIA

Australia, 65a, 65b, 65c.
 New Zealand, 142a, 142b, 143a.
 Tasmania, 157a.

PACIFIC ISLANDS, 68c, 69a, 139a.

NORTH AMERICA, 100b, 100c, 160e.

Canada, 89a.
 U.S.A., 64a, 68d, 70a, 71a, 112a, 118d,
 129c, 132a, 132g, 160d.

CENTRAL AMERICA

Mexico, 74a, 74b.
 Panama, 74c.

WEST INDIES, 107a, 107b.

Dominican Republic, 139c.
 Trinidad, 107a.

SOUTH AMERICA

Argentine, 96a.
 Brazil, 118a, 147a.
 Colombia, 74c.
 Dutch Guiana, 107a, 107b.
 Venezuela, 84a.

IMPERIAL AGRICULTURAL BUREAUX

JOINT PUBLICATION NO. 12

PHENOTHIAZINE 1942-46 : A REVIEW AND BIBLIOGRAPHY

By J. Tweedale Edwards, M.R.C.V.S. and The Imperial Bureau of Agricultural Parasitology (Helminthology)

November, 1947. Price 4s. od. post free

in continuation of :

The Present Position of Phenothiazine as an Anthelmintic, by D. G. Davey, Ph.D., M.Sc. & J. R. M. Innes, D.Sc., Ph.D., M.R.C.V.S., F.R.S.E., issued by The Imperial Bureau of Animal Health, August, 1942

and

Bibliography of Phenothiazine as an Anthelmintic, issued by The Imperial Bureau of Agricultural Parasitology (Helminthology), August, 1942

HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY
FOR THE YEAR 1947
Vol. XVI, Part 3

62—Acta Medica Scandinavica.

- a. CAWSTON, F. G., 1947.—“Schistosomiasis in Southern Africa.” 127 (6), 509–513.

63—Acta Tropica. Basel.

- a. VOGEL, H. & MINNING, W., 1947.—“Ueber die Einwirkung von Brechweinstein, Fuadin und Emetin auf *Bilharzia japonica* und deren Eier im Kaninchenversuch.” 4 (1), 21–56; (2), 97–116. [English & French summaries pp. 113–116.]

(63a) The effect of tartar emetic, fouadin and emetine on the adults and eggs of *Schistosoma japonicum* was studied in experimentally infected rabbits. Tartar emetic caused the worms to diminish up to 50% in size, reduction and transformation of the intestinal contents, diminution and subsequent almost complete destruction of the testes, ovary and yolk glands, and interruption and subsequent complete cessation in egg formation. Females which survived these changes began to lay normal eggs 1–3 months later. In the tissues the eggs survived a maximum of 21–22 days but this is probably their normal life. The disappearance of viable eggs from the faeces is due to the interruption of egg laying. With fouadin the effects were very similar but less intense. With emetine the genital glands showed no important changes but the yolk glands secreted a mass of cells which distended the uterus and penetrated the ovary, thus rendering egg formation impossible. None of the experimental animals were cured by emetine.

R.T.L.

64—Agricultural Chemicals.

- a. POPHAM, W. L., 1947.—“Use of chemicals to control golden nematode.” 11 (5), 30–33, 69.

(64a) Popham describes the situation with regard to *Heterodera rostochiensis* in potatoes in the U.S.A. and emphasizes the dangerous nature of the parasite by reference to the situation in Europe. General measures for controlling and preventing the spread of the nematode are given and brief reference is made to experimental work with soil fumigants, of which the more promising are said to be dichloropropylene-dichloropropane (D-D), carbon disulphide, chloropicrin, and 90% propylene dichloride with 10% methyl bromide (“Dowfume P”). As none of these was found to eradicate the nematode, strict quarantine regulations have been adopted.

M.T.F.

65—Agricultural Gazette of New South Wales.

- a. ANON, 1947.—“Diseases of carnations.” 58 (6), 313–316.
b. MAGEE, C. J., 1947.—“Root diseases of the banana.” [Notes of an address presented at the Banana Inspectors’ Conference, Murwillumbah, 1947.] 58 (8), 419–422.
c. ANON, 1947.—“Diseases of chrysanthemums.” 58 (10), 535–538.
d. NEW SOUTH WALES. DIVISION OF ANIMAL INDUSTRY, 1947.—“Feeding of pigs. Prevention of worm infestation.” 58 (10), 560.

(65a) In this popular account of some of the commoner diseases affecting carnations, brief mention is made of the galling of roots caused by *Heterodera marioni*. As a remedy against this and other root diseases the recommendation is made that good healthy cuttings be struck in clean virgin soil, or in soil sterilized by steam or formalin.

T.G.

(65b) In some notes on banana root diseases occurring in New South Wales, Magee mentions the eelworm, *Heterodera marioni*, which gives rise to galls of varying size particularly in the region of the root tip. Attacked plants only rarely show unthriftiness and no special measures are taken to avoid infestation at the present time. The author suggests that only suckers from areas known to be free from eelworm should be used as propagation stock.

T.G.

(65c) For control of *Aphelenchooides ritzema-bosi* in chrysanthemums it is recommended that after the flowers are picked all old stems and leaves should be cut away, and the crowns after being freed from soil by hosing should be immersed in water kept at 110°F. for 20 minutes, then plunged into cold water for 5 minutes and planted in moist clean soil. For rooted cuttings, tie in bundles and immerse for 15 minutes.

R.T.L.

(65d) As loose, sandy surfaces afford protection to worm eggs, feeding troughs should be placed on concrete. A feeding trough consisting of a sheet of concrete, with a bevelled depression 6 in. deep and 18 in. wide at the top with smooth sides and even slope, is recommended as a preventive measure against helminthiasis in pigs.

R.T.L.

66—American Journal of Clinical Pathology.

- a. HESSELBROCK, W. B., LIPPINCOTT, S. W., PALMER, E. D., HENDERSON, E. W. & PAULS, F. P., 1947.—“A study of various methods of stool examination in the diagnosis of schistosomiasis japonica.” *17* (3), 197-204.

(66a) These studies indicate that the direct smear examination of faeces is an efficient and valuable method for the detection of the eggs of *Schistosoma japonicum*, although no value can be placed on a single negative finding.

R.T.L.

67—American Journal of Hygiene.

- a. OTTO, G. F., MAREN, T. H. & BROWN, H. W., 1947.—“Blood levels and excretion rates of antimony in persons receiving trivalent and pentavalent antimonials.” *46* (2), 193-211.

(67a) Antimony determinations were made by Maren's colorimetric method on blood cells, plasma, urine and faeces of 14 patients under treatment for filariasis bancrofti with trivalent antimonials (anthiomaline and monosodium antimony thioglycollate) and pentavalent compounds (stibanose and neostibosan). Trivalent antimony seems to have an affinity for blood cells, whereas pentavalent antimony is found in high plasma concentrations, which may account for the high urinary excretion rate of pentavalent compounds. With either type of compound, the plasma concentration is maintained for well under 24 hours, indicating the necessity of repeated administration at intervals as short as is commensurate with safety; intervals of 12 or 24 hours are suggested. Man appears to excrete all compounds principally in the urine, pentavalent compounds, particularly stibanose, being most rapidly excreted; faecal excretion is very low in man, who differs widely in this respect from the hamster.

E.M.S.

68—American Journal of Tropical Medicine.

- a. RODRIGUEZ-MOLINA, R. & SHWACHMAN, H., 1947.—“Fuadin therapy in 150 cases of schistosomiasis mansoni with a follow-up of 70 cases.” *27* (2), 117-127.
- b. MAY, E. L., 1947.—“Parasitologic study of 400 soldiers interned by the Japanese.” *27* (2), 129-130.
- c. EYLES, D. E., HUNTER, III, G. W. & WARREN, V. G., 1947.—“The periodicity of microfilariae in two patients with filariasis acquired in the South Pacific.” *27* (2), 203-209.
- d. EYLES, D. E. & MOST, H., 1947.—“Infectivity of Pacific Island *Wuchereria bancrofti* to mosquitoes of the United States.” *27* (2), 211-220.
- e. FOSHAY, L., 1947.—“The cuticular morphology of some common microfilariae.” *27* (2), 233-243.
- f. BURROWS, R. B., MOREHOUSE, W. G. & FREED, J. E., 1947.—“Treatment of trichuriasis with ‘enseals’ of emetine hydrochloride.” *27* (3), 327-338.
- g. LEAVITT, S. S. & BECK, O. H., 1947.—“Schistosomiasis japonica. A report of its discovery in apparently healthy individuals.” *27* (3), 347-356.
- h. WOKE, P. A., 1947.—“Arthropods of sanitary importance in the Republic of Nicaragua, Central America.” *27* (3), 357-375.
- i. BARTTER, F. C., COWIE, D. B., MOST, H., NESS, A. T. & FORBUSH, S., 1947.—“The fate of radioactive tartar emetic administered to human subjects. I. Blood concentration and excretion following single and multiple intravenous injections.” *27* (3), 403-416.

(68b) 86% of 400 American soldiers held by the Japanese as prisoners in camps in the Philippines and afterwards in Japan were found to be infected with helminth parasites. Multiple infections with *Ascaris*, *Trichuris* and hookworm were frequent.

R.T.L.

(68c) A study of the blood of two patients who had acquired filarial infection in the Tonga and Society Islands showed that microfilariae were present at all hours with a diurnal peak. It is suggested that the term "diurnal periodicity" would be more appropriate than "non-periodic" or "aperiodic" commonly used in the literature.

R.T.L.

(68d) Tests for susceptibility to infection with *Wuchereria bancrofti* of Pacific origin (Society Islands) were carried out on U.S.A. mosquitoes. In 10 species development to advanced or infective stages occurred, but the authors are of opinion that only *Culex pipiens* and possibly *C. quinquefasciatus* are dangerous potential vectors in U.S.A.

R.T.L.

(68e) Striation of the cuticle extending from tip to tip of the microfilariae of *Wuchereria bancrofti*, *W. malayi*, *Loa loa*, *Mansonella ozzardi*, *Acanthocheilomema perstans*, *Onchocerca volvulus*, *Dirofilaria immitis* and, less certainly, of *Litomosoides carini* was demonstrated by the Saisawa-Sugawara silver deposition method.

R.T.L.

(68f) Enteric-sealed tablets of emetine hydrochloride as used in the treatment of amoebiasis were equal to, if not superior to, leche de higuero in removing *Trichuris trichiura* from 88% of 23 patients. The treatment also removed some *Enterobius vermicularis*, *Necator americanus* and *Ascaris lumbricoides*. In all the patients the treatment caused diarrhoea with blood, mucus and intestinal mucosa, and in a few there was nausea and vomiting.

R.T.L.

(68g) Of 177 officers and men of the U.S. forces examined in the Western Pacific war area, 34 showed eggs of *Schistosoma japonicum* in the faeces. All remained on full duty and had no serious disabling symptoms. These mild cases responded excellently to fouadin. The authors emphasize the importance of prompt and intensive treatment of such cases before irreversible liver damage occurs.

R.T.L.

(68h) Lists are given of the species of Arthropoda obtained during a nine weeks' survey in selected areas of the Nicaraguan Republic. They provide information upon which programmes for the control and eradication of arthropod-borne diseases, including filariasis, might be usefully based.

R.T.L.

(68i) Using radioactive antimony synthesized into tartar emetic, the authors have found that approximately 80% of the antimony is eliminated in the urine and 20% by the bowel. Approximately 12% is eliminated in 24 hours, 30% in a week and in one case 73% in four weeks. Evidence was obtained that the immediate toxic symptoms are due to a rate of injection which is too rapid to allow for the precipitous fall in blood level of antimony which normally follows the injection. It is suggested that the basic blood level of antimony may be controlled by adjusting size and frequency of dosing.

R.T.L.

69—American Journal of Tropical Medicine. Supplement.

- a. LEVINE, N. D. & HARPER, P. A., 1947.—"Malaria and other insect-borne diseases in the South Pacific Campaign, 1942-1945. IV. Parasitological observations on malaria in natives and troops, and on filariasis in natives." 27 (3), Supplement, pp. 119-128.

(69a) The results of filariasis surveys made by U.S. parasitologists during the South Pacific Campaign show that the incidence of microfilariae of *Wuchereria bancrofti* among the native populations ranged from 4% in New Caledonia to 39% in Emirau. In Fiji it was 30%, in the Samoan area 24% and in Guadalcanal and Espiritu Santo it was 22%. In Samoa, Fiji, New Caledonia and the Loyalty Islands there was no nocturnal periodicity, the principal vector being the day-feeding *Aedes scutellaris pseudoscutellaris*, while in the Solomons, New Hebrides and Emirau nocturnal periodicity occurred and was probably associated with the night-feeding *Anopheles farauti* Laveran. The microfilariae of *W. malayi* occurred only in an unstated number of labourers imported from Indo-China into Espiritu Santo, the incidence being 9%.

R.T.L.

70—American Journal of Veterinary Research.

- a. OLSEN, O. W., 1947.—“ Hexachloroethane-bentonite suspension for controlling the common liver fluke, *Fasciola hepatica*, in cattle in the Gulf Coast region of Texas.” 8 (29), 353–366.
- b. LUCKER, J. T. & NEUMAYER, E. M., 1947.—“ An experiment on the relationship of diet to hookworm disease in lambs.” 8 (29), 400–412.

(70a) Hexachloroethane-bentonite suspension, when administered in a single dose of 200 c.c. for adult cattle and 100 c.c. for yearlings, is an effective drench for the removal of *Fasciola hepatica* and is safe even when given in excessive doses. Occasional clinical reactions were temporary loss of appetite and mild diarrhoea. Dizziness, reeling, drowsiness and lack of appetite sometimes occurred in weak animals and a few failed to recover. The drug did not act successfully where there was extensive pathological change in the liver or against young flukes in the liver tissue. Half-yearly medication prevented clinical fascioliasis but did not preclude recurrence of infection. In Texas wild rabbits and hares, particularly jack rabbits, were heavily infected.

R.T.L.

(70b) The results of a small-scale experiment on the relation between diet and *Bunostomum trigonocephalum* infection in lambs were impressive in that well fed lambs developed only moderate anaemia and practically all recovered from the effects of infection, following exposure to the same number of larvae which caused extreme anaemia and death in poorly fed lambs. It appeared that equal exposure to infection led to far more drastic effects in the poorly fed than in the well fed. A much larger proportion of the larvae developed in the poorly fed lambs, which were less able to compensate for the loss of blood. These conclusions are supported by a wealth of detail and tabulated matter giving the total leucocyte, haematocrit, haemoglobin and red cell determinations, the results of benzidine tests for occult blood in the faeces, the number of eggs in the faeces, the number of worms recovered at autopsy, the gain and loss of weight, and the food consumption during the experiment.

R.T.L.

71—American Midland Naturalist.

- a. MACY, R. W., 1947.—“ Parasites found in certain Oregon bats with the description of a new cestode, *Hymenolepis gertschi*.” 37 (2), 375–378.

(71a) Macy has described *Hymenolepis gertschi* n.sp. from *Myotis californicus caurinus* in Oregon. It can be recognized by the possession of 35–41 rostellar hooks measuring 0·026–0·029 mm. long, and of a short cirrus sac. He obtained the following helminth parasites from other bats in Oregon : *Limatulum gastroides*, *Acanthatrium oregonense*, *Allasogonoporus vespertilionis* and an immature unidentified trematode of the family Lecithodendriidae.

P.A.C.

72—American Naturalist.

- a. BRITT, H. G., 1947.—“ Chromosomes of digenetic trematodes.” 81 (799), 276–296.

(72a) In a study of the chromosome number and morphology of 35 species of digenetic trematodes, representing 25 genera and eight families, Britt found that the chromosome number was constant for each species and that variations occurred within families and genera. It is suggested that aneuploidy had probably played a major part in speciation in this group. H.C.

73—American Rose Annual.

- a. MASSEY, L. M., 1947.—“ Soil fumigants for root-knot control.” 32, 119–124.

(73a) Massey gives an account of root-knot symptoms, caused by *Heterodera marioni*, on the roots of the cultivated rose. He briefly describes the causal organism and indicates its life-history. In discussing control measures he recommends the use of some of the newer halogenated hydrocarbons, including dichloropropane-dichloropropylene mixtures sold as “D-D” and “Dowfume N”, chloropicrin sold under the name “Larvacide”, ethylene dibromide sold as “Dowfume W-10” and “Iscobrome D”, and methyl bromide sold as “Iscobrome” and “Dowfume G”. Particulars are given for the preparation of the soil and the application of the fumigants.

T.G.

74—Anales del Instituto de Biología. Mexico.

- a. CABALLERO Y C., E. & HERRERA ROSALES, E., 1947.—“Tremátodos de las tortugas de México. V. Descripción de una nueva especie del género *Telorchis*.” 18 (1), 159–164.
- b. CABALLERO Y C., E., 1947.—“*Stichorchis subtriquetrus* (Rudolphi, 1814) en los castores del Estado de Nuevo León, México.” 18 (1), 165–168.
- c. CABALLERO Y C., E., 1947.—“Algunas filarias de mamíferos y de reptiles de las Repúblicas de Colombia y Panamá.” 18 (1), 169–188.

(74a) *Telorchis dissentaneus* n.sp. is a trematode parasite of the small intestine of *Kinosternon integrum*. The most useful diagnostic features are the presence of an oesophagus, the shape of the bursa, the distribution of the vitelline glands and the position of the ovary.

P.A.C.

(74b) Caballero y C. redescribes *Stichorchis subtriquetrus*, found in the intestine of *Castor canadensis mexicanus*. The details of the excretory system were clearly visible in immature specimens, owing to the precipitation of the corrosive sublimate used as fixative.

P.A.C.

(74c) Caballero y C. describes a number of filarial worms, including *Litomosoides fosteri* n.sp. which he recovered from the peritoneal cavity of *Glossophaga soricina leachi* in Panama. The number of caudal papillae in the male is a distinguishing feature as is also the shape and size of the spicules. He also redescribes *Dirofilaria incrassata* from *Bradypterus griseus* and *Cholepus hoffmanni*, and *Molinema diacantha* from *Coendou rothschildi*, as well as considering various other species. *Skrjabinofilaria pricei* from *Didelphis marsupialis etensis* is transferred to the genus *Dipetalonema* and is redescribed. The generic description of *Tetrapetalonema* is emended.

P.A.C.

75—Annales de Parasitologie Humaine et Comparée.

- a. GALLIARD, H. & NGU, D.-V., 1947.—“Recherches sur la spécificité parasitaire de *Fasciolopsis buski*.” 22 (1/2), 16–23.
- b. GALLIEN, L., 1947.—“Description de *Polystomum gallieni* E.-W. Price (Monogenea, Polystomatidae) parasite de *Hyla arborea* var. *meridionalis* Boettger.” 22 (1/2), 24–29.
- c. GALLIARD, H., 1947.—“Evolution de *Wuchereria bancrofti* et *W. malayi* chez *Aedes (Stegomyia) aegypti* et *A. (S.) albopictus*.” 22 (1/2), 30–35.
- d. DESPORTES, C., 1947.—“Tridelphie chez une filaire nouvelle parasite du héron pourpré (*Ardea purpurea* L.).” 22 (1/2), 36–44.
- e. DESPORTES, C., 1947.—“Sur les caractères spécifiques d'une nouvelle espèce de Cucullanidae, *Seuratum cadarachense* n.sp., de l'intestin du lérot (*Eliomys quercinus* L.).” 22 (1/2), 45–52.

(75a) The authors hold that the discrepancy between the geographical distribution of *Fasciolopsis buski* in man and in pigs is only an apparent one and is not due to the existence of separate biological species adapted to these hosts. In Tonkin, the scarcity of *F. buski* in man may be accounted for by the fact that the vegetable vectors, *Eichhornia crassipes* and *Trapa natans*, are either mainly used as animal food or are cooked before human consumption. Only one natural infection in a dog was observed in Tonkin; this fact in conjunction with experimental efforts to infect dogs both by the mouth and by transplantation show that the dog is probably a refractory host. Morphological studies on human, porcine and canine *F. buski* indicate that they all belong to the same species.

J.J.C.B.

(75b) *Polystomum gallieni* was named by Price in 1939 on the basis of a brief description without name by Gallien in 1938. Gallien now describes the species in detail. It has affinities with *P. integerrimum* but differs from it principally in its smaller size, the relatively small size of the opisthaptor, and the lack of anastomoses of the branches of the intestine.

J.J.C.B.

(75c) Galliard investigated experimentally the role of *Aedes aegypti* and *A. albopictus* as vectors of *Wuchereria bancrofti* and *W. malayi* in Tonkin. Complete development of *W. bancrofti* took place in *A. aegypti* in certain cases, while in others development was only partial or abortive. Early larval stages only were found in *A. albopictus*. *W. malayi* developed completely in both species of mosquitoes in a small percentage of cases. The variable nature of the results obtained bore no relation to the number of microfilariae in the blood, and is attributed either to some quality in the insect hosts or to racial divergencies in the parasites.

J.J.C.B.

(75d) Desportes describes a new filarial worm from the connective tissue of *Ardea purpurea*. Only a single female was available, which is placed provisionally in the genus *Lemdana* Seurat, 1917, and is named *L. lomonti* n.sp. The specimen possessed three ovaries and three uteri; this phenomenon is discussed in relation to its occurrence in the Nematoda generally.

J.J.C.B.

(75e) Desportes describes *Seuratum cadarachense* n.sp. from the intestine of *Eliomys quercinus*. The differences between this species and *S. tacapense* (Seurat, 1915) are discussed at considerable length with special reference to certain characters in the genital organs of both sexes. The spicules of the new species are much longer (165-195 μ) and the gubernaculum is larger, being half the length of the spicules. In the female a seminal receptaculum is clearly visible in the new species while it is apparently lacking in *S. tacapense*.

J.J.C.B.

76—Annales de la Société Belge de Médecine Tropicale.

- a. BERTRAND, 1947.—“Distomatose pulmonaire ou hémoptysie pulmonaire à Paragonimus.” 27 (1), 1-4. [Flemish summary p. 4.]
- b. FAIN, A., 1947.—“Répartition et étude anatomo-clinique des filarioses humaines dans le territoire de Banningville (Congo Belge). (*Wuchereria bancrofti*—Cobbald, *Filaria loa*—Guyot, *Dipetalonema perstans*—Manson, *Dipetalonema streptocerca*—Macfie et Corson, *Onchocerca volvulus*—Leuckart.)” 27 (1), 25-63. [Flemish summary pp. 52-53.]
- c. FAIN, A., 1947.—“Un cas de sparganose chez l’homme, deux cas de sparganose chez le serval et un cas de diphyllothorhiose (*D. parvum*) chez le chacal au Congo belge.” 27 (1), 65-69. [Flemish summary p. 68.]
- d. JACQUES, J. J. C., 1947.—“Effets d’une cure de vingt grammes de sulfamidés ‘per os’ sur les verminoses intestinales de l’indigène.” 27 (1), 83-84. [Flemish summary p. 84.]
- e. HOOF, L. VAN, HENRARD, C., PEEL, E. & WANSON, M., 1947.—“Sur la chimio-thérapie de l’onchocercose. (Note préliminaire.)” 27 (1), 173-177. [Flemish summary p. 177.]

(76a) Bertrand describes a case of paragonimiasis in a native from the Katompe region. This is the third authenticated case in the Belgian Congo, all from widely separated localities. Many natives eat crayfish and it is considered that the parasite may be much more frequent and widespread than the records indicate.

E.M.S.

(76b) In a survey of human filariases in Banningville, Fain found *Wuchereria bancrofti* in 6.7% of 2,510 of the indigenous population examined. In riverine villages the incidence was 12.8%; in villages over 2 km. distant from large rivers the incidence was only 1.5%. The commonest clinical manifestations were adenolymphocoele and hydrocoele, and in 4.3% there was elephantiasis almost exclusively in the lower limbs. Acute manifestations (lymphangitis) were not encountered. *Onchocerca volvulus* was found in 12% of 1,448 examined, the only outward signs being subcutaneous nodules located on the iliac crest; *Simulium damnosum*, *S. albivirgulatum* and a new species were found biting man. *Dipetalonema streptocerca* occurred in 12% of 2,510 examined; no clinical signs were associated with this infection even in highly infested regions, but one such area coincided with a focus of endemic goitre. *Acanthocheilonema perstans* is very uniformly distributed with a mean infection percentage of 60% in adults. No clinical manifestations were observed in connection with this infection. *Loa loa* was found only in four cases which were probably imported, and no insect vectors were found though a very thorough search was made.

J.J.C.B.

(76c) Fain reviews the literature on human sparganosis and describes a case from Banningville, in a native aged 25 years. A single worm was recovered, in the course of an operation for inguinal hernia, from connective tissue surrounding the spermatic cord just before its entry into the scrotum. It measured 75 cm. long and elongated to one metre when suspended by one extremity. Eggs of *Diphyllobothrium* have never been found in stool examinations in Banningville but examination of several jackals (*Canis adustus*) revealed a single infection of *D. parvum* in the intestine. In two servals (*Felis serval*) out of three examined, a total of 12 spargana were found, usually enclosed in a thin membrane just under the skin. The longest of these measured 40 cm.

J.J.C.B.

(76d) During sulphonamide treatment of natives for blennorrhagia, 83 patients were selected with various helminthiases, comprising 68 with hookworm, 39 with *Ascaris*, 13 with *Trichuris*, 2 with *Strongyloides* and 3 with *Enterobius*. The course of 20 gm. of sulphonamide administered was without effect on the helminth infestation in every case. E.M.S.

(76e) In preliminary trials with "Belganyl" or "Antrypol" in cases of onchocerciasis, a total of 7 gm. sufficed to get rid of both adult worms and microfilariae in many cases, and 10 gm. appeared to be curative in every case. The effect was not immediate, 1-2 months being necessary for complete disappearance of microfilariae and a still longer period for the resorption of the fibrous nodules. J.J.C.B.

77—Annals of Applied Biology.

- a. JONES, D. P., 1947.—"Calcium chloracetate as soil dressing against beet eelworm, *Heterodera schachtii* Schmidt, with certain additional observations." 34 (2), 240-245.

(77a) Calcium chloracetate at the rate of 3 and 6 cwt. per acre had no material effect in reducing the cyst or larval counts of *Heterodera schachtii* in a trial on fen "skirt" type soil, although the washed beet and total sugar yields of sugar-beet were increased. R.T.L.

78—Annals of Internal Medicine.

- a. HATHAWAY, F. H. & BLANEY, L., 1947.—"Trichinosis: report of an epidemic." 26 (2), 250-262.
- b. GANNON, J. M., 1947.—"Onchocerciasis: case report." 26 (2), 287-290.

79—Annals of Tropical Medicine and Parasitology.

- a. COWPER, S. G., 1947.—"Observations on the life-cycle of *Schistosoma mansoni* in the laboratory, with a discussion on the snail vectors of *S. mansoni* and *S. haematobium*." 41 (2), 173-177.
- b. BERTRAM, D. S., 1947.—"The period required by *Litomosoides carinii* to reach the infective stage in *Liponyssus bacoti*, and the duration of the mites' infectivity." 41 (2), 253-261.
- c. VOGEL, H., 1947.—"Hermaphrodites of *Schistosoma mansoni*." 41 (2), 266-277.

(79a) Cowper succeeded in infecting *Planorbis boissyi* of Egyptian origin and *Australorbis glabratus* of tropical American origin by exposing them to miracidia from a Uganda strain of *Schistosoma mansoni*. On the other hand, *Bulinus truncatus* of Egyptian origin proved completely unattractive to miracidia from a West African strain of *S. haematobium*. The significance of these findings in respect of host-parasite distribution and relationship is discussed. J.J.C.B.

(79b) The transmission of *Litomosoides carinii* by *Liponyssus bacoti* appears to be connected with the feeding habits of the mite, but the actual mode of transmission has not been established. Infected mites maintained by blood meals at 5-day intervals first transmit the infection at the third meal or the 15th day after the infecting meal and transmission may continue until the 7th meal. The infective forms of the parasite appear to be the thread-like worms of 0.5 mm. to 1 mm. which are found on dissection of mites 14-36 days after the infecting meal. Two series of mites dissected before the first infective meal showed 38% and 21.8% infection rates respectively, and the number of worms present ranged from one to five and from one to two respectively. J.J.C.B.

(79c) Vogel describes secondary hermaphrodites of *Schistosoma mansoni*. These show the ordinary male characters but also have an ovary situated between the group of testes and the posterior intestinal junction. An oviduct and uterus were seen in some specimens but never a genital pore with certainty. These worms are genetically males whose transformation is favoured by certain hosts, viz., guinea-pigs, hamsters and rabbits, and occurs most frequently in the absence of females. Males in copula are described, which comprise a small hermaphrodite embraced by a normal male. It is possible that residence in the gynaecophoric canal, essential to sexual maturation of the female, may stimulate development of rudimentary female characters, thus accounting for the hermaphrodites. No hermaphrodites were found in *S. japonicum* and *S. haematobium*. Rudimentary yolk glands are also described in male *S. mansoni*. They are situated at both sides of the caecum and occur irrespectively of ovary development. J.J.C.B.

80—Archives of Dermatology and Syphilology.

a. HITCH, J. M., 1947.—“ Systemic treatment of creeping eruption.” 55 (5), 664-673.

(80a) Clinical and laboratory data are given of 33 patients, suffering from creeping eruption due to *Ancylostoma braziliense*, who came under Hitch’s observation in a sandy region in south-eastern North Carolina. The local cats and dogs were almost all infected with *A. braziliense*. Treatment with fouadin, neostibosan, tartar emetic, and oxophenarsine hydrochloride resulted in cures in 37-63%. Oxophenarsine hydrochloride was the most promising of the drugs used.

R.T.L.

81—Archives of Neurology and Psychiatry. Chicago.

a. WATSON, C. W., MURPHEY, F. & LITTLE, S. C., 1947.—“ Schistosomiasis of the brain due to *Schistosoma japonicum*. Report of a case.” 57 (2), 199-210.

(81a) In a case of schistosomiasis japonica of the brain the pre-operative electroencephalogram was abnormal with localization of abnormally slow activity showing “phase reversal” in the region of the posterior third of the superior temporal gyrus, including the superior portion of the angular gyrus and the inferior portion of the supramarginal gyrus. There was definite generalized “epileptogenic activity”. The progressive enhancement of epileptogenic activity is shown on a composite chart. Ventriculographic study showed a large expanding lesion in the left parietotemporal region. Opacity was present in the region of the posterior portion of the left temporal horn. An exploratory parietotemporal craniotomy revealed a mass 5-6 cm. in diameter with gross appearance of a glioblastoma multiforme. Biopsy specimens contained eggs of *Schistosoma japonicum*. Some reduction of the tumour mass apparently resulted from fouadin therapy as there was no recurrence of the headaches from which the patient had previously suffered.

R.T.L.

82—Archives of Pathology.

a. HARTZ, P. H., HUGENHOLTZ, M. J. & VAN DER SAR, A., 1947.—“ Helminthic infection of the wall of the gallbladder.” 43 (4), 408-411.

(82a) A necrotic worm, presumably a filaria, was found in the epithelium of the gallbladder which had been removed from a Surinam patient suffering from cholelithiasis. R.T.L.

83—Biological Reviews.

a. SMYTH, J. D., 1947.—“ The physiology of tapeworms.” 22 (3), 214-238.

(83a) Smyth has evidence to show that the cuticle of cestodes is resistant in itself to the action of digestive juices and that there is no need to assume the secretion of anti-enzymes. It can be dissolved by submitting it first to an acid bath and then to an alkaline bath, but is not dissolved by either alone. After ingestion of a cysticercus by the definitive host, the bladder alone comes into contact with the gastric juice, for the scolex is protected in its invagination canal. A parallel course of events probably occurs after the egg is taken in by the vector, leading to the release of the oncosphere. While most cestodes use glucose very largely in their metabolic processes, plerocercoid larvae can undergo complete maturation in a glucose-free medium. This suggests that they can use carbohydrate-protein compounds for metabolism. Other substances, e.g. the vitamin G complex, are necessary in small quantities.

P.A.C.

84—Boletín del Laboratorio de la Clínica “Luiz Razetti”.

a. BRICEÑO-IRAGORRY, L., 1947.—“ Nueva especie de foco de bilharziosis en el oriente de la República.” 15 (23/24), 513-514.

(84a) *Schistosoma mansoni* eggs were found in the faeces of a 7-year-old child visiting Caracas. As the whole of the child’s previous life had been spent in two localities in the state of Monagas, a focus of infection probably exists in that state.

E.M.S.

85—British Sugar Beet Review.

- a. JONES, F. G. W. & PETHERBRIDGE, F. R., 1947.—“Beet eelworm.” 15 (4), 139-142; 16 (1), 31-36.

(85a) Jones & Petherbridge describe the occurrence and distribution of the sugar-beet eelworm (*Heterodera schachtii*) in England and Wales, and briefly recount its life-history and the effect of its attack on sugar-beet. They give a list of weeds and crop plants which are attacked. The changes in the beet eelworm populations in six fields during six years were studied in relation to the crops grown. In heavily infested fields at least ten years' rest from susceptible crops was necessary before beet could safely be grown: in less heavily infested fields the population rose sharply after a sugar-beet crop but fell to a safe level in two or three years under insusceptible crops. Large numbers of susceptible weeds may maintain a considerable eelworm population. The means of spread of eelworm are mentioned. No chemical means of controlling it are known: crop rotation is the only way. The Sugar Beet Eelworm Order is explained.

M.T.F.

86—Bulletin of Entomological Research.

- a. GARNHAM, P. C. C. & McMAHON, J. P., 1947.—“The eradication of *Simulium neavei*, Roubaud, from an onchocerciasis area in Kenya Colony.” 37 (4), 619-628.

(86a) An endemic focus of onchocerciasis in South Kavirondo, Kenya Colony, was completely cleared of the insect vector, *Simulium neavei*, by periodical application of D.D.T. emulsion to infested rivers in the locality. Treatment of the rivers, which is described in detail, was begun in January 1946 and continued for six months. Systematic catches of adult flies were carried out throughout the previous year and during the experiment. In February and March, the second and third months of the experiment, the number of flies caught dropped significantly and during the subsequent six months they disappeared entirely from the area. The possibility of reinestation is discussed and is considered to be unlikely, but the effect on the onchocerciasis incidence in the African community will not be felt immediately. As a baseline for future surveys designed to test the results of this *S. neavei* eradication, 79 children aged 4-8 years in the endemic area were examined for onchocerciasis by the skin-snip technique and of these 37% were positive; 14 children aged 3-4 years showed only one positive (7%).

J.J.C.B.

87—Bulletin des Séances. Institut Royal Colonial Belge.

- a. SCHWETZ, J., 1947.—“Note culicido-paludologique et malaco-schistosomique sur l'exploitation diamantifère de Bakwanga-Tshimanga (rivière Bushimaie).” 18 (1), 307-318.

(87a) Schistosomiasis and ancylostomiasis are widespread in the Lubilash Basin and on the banks of the Bushimaie river in Belgian Congo. Of 317 persons examined 10·4% showed intestinal schistosomiasis and 33·4% had hookworm. *Planorbis adowensis* was found in the river Kashondolo near the village of Mukebo, about 5 km. from Bakwanga, and young *Pyrgophysa forskaii* in Tshimanga.

R.T.L.

88—Bulletin de la Société de Pathologie Exotique.

- a. TOUMANOFF, C. & LE-VAN-PHUNG, 1947.—“Note au sujet d'un cas de gnathostomose humaine observée en Indochine.” 40 (5/6), 168-174.
 b. TOUMANOFF, C. & NGUYEN VAN HUONG, 1947.—“Un cas autochtone de gnathostomose humaine observé en Indochine.” 40 (5/6), 174-175.
 c. PICK, F. & DESCHIENS, R., 1947.—“La distomatose à *Watsonius watsoni* (Conyngham 1904) Stiles et Goldberger 1910 chez le papion.” 40 (5/6), 202-211.
 d. PICK, F., 1947.—“Un système de vaisseaux mis en évidence chez le trématode *Watsonius watsoni*.” 40 (7/8), 263-265.
 e. FLOCH, H. & LAJUDIE, P. DE, 1947.—“Sur le parasitisme intestinal en Guyane française.” 40 (7/8), 265-270.

(88c) Pick & Deschiens made observations on ten cases of infection with *Watsonius watsoni* in baboons (*Papio sphinx*) in French Guinea. The adult worms, recovered after autopsy or by spontaneous evacuation, varied greatly in size from 2-10 mm. in length, 1-5 mm.

in width and 0·5-4·0 mm. in thickness. They occupied the ileum, caecum, colon and rectum, and in four instances their numbers ranged from 200 to 1,000. Characteristic lesions are associated with the infection and consist of mechanical and traumatic effects due to the attachment of the worms to the intestinal wall. Four stages in the disease are recognizable : (i) latent period, (ii) period of mild diarrhoea, (iii) period of serious diarrhoea, (iv) period of dehydration and fatal cachexia.

J.J.C.B.

(88d) Pick has described and illustrated by two photomicrographs a symmetrical vascular system in the region of the two caeca in specimens of *Watsonius watsoni* from *Papio sphinx*. This system was revealed when the flukes were mounted in Canada balsam after immersion in pure glycerin for 24 hours. It is suggested that the morphology of this vascular system may later prove of value in the classification of trematodes.

R.T.L.

(88e) [This is essentially the same as Publication No. 121, Institut Pasteur de la Guyane et du Territoire de l'Inini (1946)—see Helm. Abs., 15, No. 272.]

89—Canadian Journal of Research. Section D, Zoological Sciences.

- a. CHOQUETTE, L. P. E., 1947.—“*Phyllostomum lachancei* sp.nov., a trematode from the ureters of *Salvelinus fontinalis* (Mitchill), with a note on its pathogenicity.” 25 (4), 131-134.

(89a) Choquette describes *Phyllostomum lachancei* n.sp., a parasite of the ureters of the speckled trout (*Salvelinus fontinalis*) in Quebec. Distinguishing features are the division of the body into two sections, the small oral sucker and the arrangement of the genitalia. It does not appear to cause much harm in the ureters beyond a certain distension of the lumen and a flattening of the lining epithelium.

P.A.C.

90—Ciencia. Mexico.

- a. BAYONA, A., 1947.—“Estudio comparativo de las diferentes técnicas empleadas para la investigación de parásitos intestinales.” 7 (11/12), 399-403.

(90a) Bayona has examined the faeces of children for helminths and protozoa by sedimenting in 0·85% NaCl with 2% added formalin, and then centrifuging at moderate speed. The sediments obtained were examined directly and compared with the results of further examination by the techniques of Carles-Barthelemy, of Faust (1943), and of Shearer (in “Approved Laboratory Technic” by Kolmer & Boerner, 1945). Faust’s technique proved the most successful in finding protozoan cysts, that of Carles-Barthelemy for *Trichuris trichiura*, and that of Shearer for helminths generally. A combination of Faust’s and Shearer’s techniques is recommended as ideal. Direct preparations revealed 100% of *Taenia* infections.

P.A.C.

91—Comptes Rendus des Séances de l’Académie des Sciences. Paris.

- a. DESCHIENS, R. & POIRIER, M., 1947.—“Données relatives à l’intoxication vermineuse expérimentale.” 224 (9), 689-690.
 b. KENT, N. & MACHEBOEUF, M., 1947.—“Sur l’existence de cénapses protéines-acides biliaires dans les cestodes (*Moniezia expansa* et *Taenia saginata*).” 225 (13), 539-540.
 c. KENT, N. & MACHEBOEUF, M., 1947.—“Sur l’existence de cénapses glycogéno-protéiques dans un cestode (*Moniezia expansa*).” 225 (14), 602-604.

(91a) By means of trichloroacetic acid extraction, Deschiens & Poirier have obtained an ascarid fraction which, when injected into the blood stream of guinea-pigs, produces death with all the symptoms of intoxication and anaphylaxis. Animals can be protected from verminous intoxication and death by the previous administration of substances which neutralize histamine. This seems to suggest that histamine is the toxic substance involved.

P.A.C.

(91b) The protein precipitate which formed during dialysis of lipid-free cestode material in distilled water under pressure, contained only 8·6% nitrogen and was thus not a simple protein although rich in amino acids. Prolonged alcoholysis of this precipitate resulted in the separation of material giving a strong Pettenkofer reaction for bile acids. Kent & Macheboeuf postulate the occurrence of protein and bile acid chemical agglomerates not previously recognized.

E.M.S.

(91c) The material remaining in solution after distilled water dialysis of lipid-free cestode material is rich in proteins and in glycogen. Precipitation with 44·6% ammonium sulphate resulted in precipitation of 99% of the protein and 20% of the glycogen. By electrophoresis it was shown that two types of protein-glycogen agglomerates were present, viz., a slow fraction containing 60% glycogen to which is given the name Baerine and a rapid fraction containing 11% glycogen, designated Moniezine. The material insoluble in distilled water was subjected to saline extraction. It consisted principally of nucleoproteins which were all aggregated with bile acids or with glycogen. Kent & Macheboeuf conclude that *Moniezia expansa* contains practically no free protein.

E.M.S.

92—Comptes Rendus des Séances de la Société de Biologie. Paris.

- a. MARCHAL, G., 1947.—“Variation du pouvoir toxique de l'extrait trichloracétique d'*Ascaris megalcephala*.” **141** (9/10), 443-444.

93—Deutsche Tierärztliche Wochenschrift.

- a. BARKE, A., 1947.—“Welche Wurmmittel stehen heute noch zur Behandlung von Hunden zur Verfügung ?” **54** (29/30), 213-215.
- b. VOSS, H. J., 1947.—“Beitrag zur Klinik nicht traumatischer Widerristschäden beim Pferde.” **54** (31/32), 229-234; (33/34), 245-247.
- c. LUDWIG, H., 1947.—“Über Erschöpfungskrankheiten der Pferde, unter besonderer Berücksichtigung der infektiösen Anämie.” **54** (41/42), 313-320.

(93a) With the object of assisting the practitioner to meet the present acute shortage of anthelmintic preparations in Germany, Barke gives a useful summary of the dosage and efficacy of all the drugs which may be available and which have been successfully employed against ascarids and tapeworms in dogs. The proprietary names of preparations of oil of chenopodium etc. are listed.

E.M.S.

(93b) From experience of 68 cases, Voss describes the pathology of fistulous conditions produced in horses by *Onchocerca* infestation. Two types of swelling were observed : those predominantly of connective tissue in which fistulae developed only in the late chronic stage or not at all, and those containing a large quantity of exudate which frequently burst. Both types can be distinguished clinically from fistulae produced by *Brucella* or by *Salmonella abortus-equi* infections, although mixed infections may be found. Treatment by chemicals directed against the filariae and by surgical methods is described. Onchocerciasis is largely unknown in German-bred horses, but was encountered in many horses brought in from France and from various countries on the eastern front during the war.

E.M.S.

(93c) The symptoms of exhaustion in horses with infectious anaemia are differentiated from those due to other causes, including worm infestation. Strongylosis was the only worm disease producing symptoms of exhaustion and was readily confirmed by faecal examination. Routine treatment with carbon tetrachloride, Allegan or phenothiazine is described. In heavily infested horses, short periods of fever (39°C.) occasionally occurred, and although in many of these animals infectious anaemia was subsequently diagnosed, in others the temperature appeared to be a genuine symptom of severe strongylosis.

E.M.S.

94—East African Medical Journal.

- a. GABATHULER, M. J. & GABATHULER, A. W., 1947.—“Report of onchocerciasis in the Ulanga District (Eastern Province, T.T.).” **24** (5), 188-195.

(94a) A routine examination of a large number of out-patients at Mahenge hospital showed that onchocerciasis is widespread in the Ulanga District and is present in 38·91% of the population. Of 1,111 males examined 41·49% were positive, and of 652 females 34·51% were positive. The percentage infection increases considerably with age. Muscular abscesses were found in association with *Onchocerca volvulus*, but the onchocercal origin of eye symptoms could not be proved.

J.J.C.B.

95—Food. London.

- a. TODD, A. R. ET AL., 1947.—“The potato eelworm hatching factor.” [Abstract of paper presented at the 11th International Congress of Pure and Applied Chemistry, London, July 22nd, 1947.] 16 (192), 274-275.

(95a) One season's leachings from 150,000 tomato plants, adsorbed on charcoal and eluted with acetone, yielded 140 gm. of a crude solid containing 1-2% of “eclepic acid”, an active principle which stimulates hatching of the larvae of *Heterodera rostochiensis*; the activity appears to be highly specific, and the substance is unstable towards alkalis. The molecule contains acidic, lactone, hydroxyl and ethereal groups, and one unsaturated linkage. Anhydro-tetronic acid is also active at a concentration 1,300 times greater than that at which natural eclepic acid causes the larvae to hatch.

M.T.F.

96—Gaceta Veterinaria. Buenos Aires.

- a. VERA, V. R. DE, 1947.—“Contribución al estudio de la hidatidosis cardiaca en los vacunos y ovinos.” 9 (45), 9-28.

(96a) De Vera describes with photographs 17 cases of cardiac hydatid observed in abattoirs in Buenos Aires. Of 14 found in cattle, 12 were in the left ventricle and only 2 in the right ventricle. The 3 found in sheep were all in the left ventricle. Only 3 of the cysts were multilocular. Not all the cysts were sterile.

E.M.S.

97—Hassadeh.

- a. MINTZ, G., 1947.—[Nematodes (*Heterodera marioni*) in the potato.] 27 (4), 171-173. [In Hebrew.]

98—Indian Medical Gazette.

- a. ROGERS, L., 1947.—“The present position of antimony treatment of filariasis: with a suggestion for its intensive use.” 82 (6), 346-348.
 b. CHAUDHURI, R. N., 1947.—“Notes on some remedies. X. Antimony and its derivatives (part II).” 82 (7), 408-410.
 c. PRAKASH, O., 1947.—“Tetrachlorethylene poisoning and treatment.” [Correspondence.] 82 (7), 439-440.

(98a) Rogers recalls his early work on the treatment of filariasis with antimony compounds. He is of opinion that where patients can stand the necessary large doses of toxic trivalent antimony salts the attacks of filarial fever should diminish and the progress of elephantiasis be checked. Having observed the reduction of the microfilariae by 90% after six daily large doses of sodium antimony tartrate, he suggests an intensive course of this drug worthy of a new trial, especially in view of the reported success of intensive treatment in schistosomiasis by Alves & Blair [see Helm. Abs., 15, No. 40a].

R.T.L.

(98b) The antimony compounds now used for therapy are of two classes, trivalent and pentavalent. Of the former the antimonyl tartrates, fouadin, and anthiomaline, and of the latter stibosan, neostibosan, urea stibamine, solustibosan, and neostam or stibamine glucoside are available on the market. The dosage, methods of administration, mode of action and toxic effects are discussed. A table sets out the initial dose, maximum dose, method of administration, percentage of antimony and frequency of injections, with some remarks on dilutions, etc.

R.T.L.

(98c) Poisoning with spasms and convulsions is reported, apparently due to the administration of three 15-minim capsules of tetrachlorethylene in a case of suspected ancylostomiasis. On the assumption that tetrachlorethylene is more or less similar to carbon tetrachloride, the patient was treated with an intravenous injection of 10 c.c. of 10% calcium gluconate solution. There was no repetition of the fits.

R.T.L.

99—Indian Veterinary Journal.

- a. MUDALIAR, S. V. & ALWAR, V. S., 1947.—“A check-list of parasites, (classes—Trematoda and Cestoda) in the Department of Parasitology, Madras Veterinary College Laboratory.” **23** (6), 423–434.
- b. RAMANARAYANAN, S., 1947.—“Tape worms in canines—therapeutic value of remedies used.” **23** (6), 465–466.
- c. RAO, M. V. G., 1947.—“Schistosomiasis among sheep/goats in Poona R.I.A.S.C., butchery.” **24** (1), 11–13.
- d. MUDALIAR, S. V. & ALWAR, V. S., 1947.—“A check-list of parasites, (class—Nematoda) in the Department of Parasitology, Madras Veterinary College Laboratory.” **24** (2), 77–94.

(99b) Ramanarayanan gives his personal experiences of the clinical effects of male fern, areca, arecoline hydrobromide, Nemurol, Cestarsol, Tenaline and Kamala when used for tapeworm infestations in dogs in India.

R.T.L.

(99c) In Rajputana (Marwar) *Schistosoma indicum* is fairly common in sheep and goats. Whereas the infected sheep are in good condition, goats are markedly anaemic and emaciated. In severe infections the liver shows extensive chronic inflammation with fibrous thickening of the hepatic vessels.

R.T.L.

100—Journal of the American Veterinary Medical Association.

- a. KITCHELL, R. L., CASS, J. S. & SAUTTER, J. H., 1947.—“An infestation in domestic turkeys with intestinal flukes.” **111** (848), 379–381.
- b. AMERICAN VETERINARY MEDICAL ASSOCIATION, 1947.—“Parasitology.” [Committee report adopted at the 84th Annual Meeting of the American Veterinary Medical Association, Cincinnati, August 18–21, 1947.] **111** (848), 430–431.
- c. AMERICAN VETERINARY MEDICAL ASSOCIATION, 1947.—“Diseases of food producing animals.” [Committee report adopted at the 84th Annual Meeting of the American Veterinary Medical Association, Cincinnati, August 18–21, 1947.] **111** (848), 435–439.
- d. COOP, M. C., 1947.—“A report on an attempt to remove adult filaria from the heart of a dog.” **111** (849), 491–492.

(100a) *Echinostoma revolutum* is reported in a flock of 670 turkeys. Diarrhoea and unthriftiness were prevalent. There was one death, 6% were noticeably sick and another 20% were not consuming the usual amount of food although a good balanced ration was provided. The intermediate host implicated was *Helisoma trivolvis*. 7 c.c. of carbon tetrachloride was administered to the sick birds *per rectum* through a rubber hose attached to a glass syringe, apparently with success. For control, low wet areas should be avoided, the intermediate hosts exterminated, and the clinical cases treated.

R.T.L.

(100b) *Fasciola hepatica* is of very limited importance in the eastern states and provinces of U.S.A. and Canada ; it is of importance in parts of New Mexico while in some areas of Texas it is a serious problem. It occurs in South Dakota, Wyoming and Colorado. In Idaho, Nevada, Utah, Oregon, Washington, California and a limited area of British Columbia it is very prevalent in sheep and cattle, and the livers of approximately 10% of all cattle slaughtered are condemned. *Fascioloides magna*, a natural parasite of deer, occurs in cattle in Texas, Louisiana and other areas scattered through North America. It is highly pathogenic to sheep although it does not cause clinical symptoms in cattle. No anthelmintic is effective. Destruction of the semi-amphibious snail vectors or elimination of the deer are the only alternatives to the cessation of sheep-rearing in infected areas.

R.T.L.

(100c) The Committee on Diseases of Food Producing Animals of the American Veterinary Medical Association points out that phenothiazine leaves much to be desired in its anthelmintic action against the smaller trichostrongylids of sheep, although it is extremely efficient against *Haemonchus contortus* and *Oesophagostomum columbianum*. Phenothiazine-salt (1 : 9) mixture is effective in preventing the hatching of eggs. In some areas liver condemnation for fluke infection may reach 70%, and severe death losses in sheep from overwhelming infestations are becoming increasingly prevalent. Stomach worms and lungworms are increasing among range and semi-range sheep and cattle in the Intermountain and Pacific Coast regions.

R.T.L.

(100d) An attempt to remove *Dirofilaria immitis* from the heart of a dog by inserting a wire into the right ventricle through an incision in the jugular vein, proved unsuccessful.

R.T.L.

101—Journal of the Australian Institute of Agricultural Science.

- a. FRASER, L., 1947.—“The use of selenium in nematode control.” 13 (1/2), 67–68.

(101a) Well established cuttings of chrysanthemum infected with the leaf nematode, *Aphelenchoides ritzema-bosi*, while growing in pots in the greenhouse, were watered with sufficient 0·25% solution of sodium selenate to give a concentration of 25 p.p.m. of the dry soil. The solution was toxic and caused small circular dead spots to appear in the leaves, but subsequent growth was normal. The nematode failed to develop in any of the treated plants, which also were not attacked by jassids, caterpillars or aphids during 7 months' observation. The untreated plants were attacked by all these pests and also developed moderate to severe symptoms of nematode disease.

M.T.F.

102—Journal of Clinical Investigation.

- a. HARRELL, G. T., HORNE, S. F., AIKAWA, J. K. & HELSABECK, N. J., 1947.—“Trichinella skin tests in an orphanage and prison. Comparison with serologic tests for trichinosis and with the tuberculin reaction.” 26 (1), 64–68.
 b. HARRELL, G. T. & HELSABECK, N. J., 1947.—“The effect on the trichinella skin test of simultaneous infection with bovine tuberculosis in trichinous rabbits.” 26 (1), 69–72.
 c. AIKAWA, J. K., HARRELL, G. T. & HELSABECK, N. J., 1947.—“The effect of peptic and tryptic digestion on the antigenicity of *Trichinella spiralis*.” 26 (1), 73–76.
 d. LIPPINCOTT, S. W., ELLERBROOK, L. D., RHEES, M. & MASON, P., 1947.—“A study of the distribution and fate of antimony when used as tartar emetic and fuaudin in the treatment of American soldiers with schistosomiasis japonica.” 26 (3), 370–378.

(102a) Harrell et al. were unable to find any correlation between the tuberculin test and trichinella skin reactions, though they confirmed the occurrence of a higher percentage of positive skin reactions to trichinella antigen in patients with active tuberculosis. The cause of this is still unexplained. The positive flocculation and precipitin tests were not found in persons with positive skin reactions, which argues against the theory that confinement in an institution is connected with sub-clinical epidemics.

P.A.C.

(102b) Following up the observations described above, Harrell & Helsabeck studied the possibility of a cross-reaction in rabbits simultaneously infected with the bovine strain of *Mycobacterium tuberculosis* and *Trichinella spiralis*. No relationship was found, nor was the intensity of the trichinous infection increased by simultaneous tuberculous infection.

P.A.C.

(102c) Aikawa, Harrell & Helsabeck have evidence to show that the antigenic fraction of *Trichinella spiralis* is not entirely protein since its sensitivity is not affected by digestion with pepsin or trypsin. It is suggested that such digestion may reduce the non-specific false positive reactions commonly met with in practice. They also consider the more marked reactivity of the skin reaction as compared with the flocculation test suggestive of two antigens.

P.A.C.

(102d) Of 33 schistosomiasis patients 27, i.e. 82%, were passing eggs within three months after cessation of treatment with fuaadin. These were again treated and 24 of them were again passing eggs within three months. Of 59 patients treated with tartar emetic II only, i.e. 19%, were again passing eggs within three months. At all stages of treatment the concentration of antimony was higher in the blood cells than in the plasma, and for several hours after administration of tartar emetic, concentration of antimony in the red blood cells was definitely higher than in those treated with fuaadin.

R.T.L.

103—Journal of the Department of Agriculture. Victoria.

- a. FLYNN, D. M., 1947.—“Worms in calves.” 45 (8), 371–373.

104—Journal of Helminthology.

- a. GOODEY, T., 1947.—“On the stem eelworm, *Anguillulina dipsaci*, attacking oats, onions, field beans, parsnips, rhubarb, and certain weeds.” *22* (1), 1–12.
- b. HICKEY, M. D. & HARRIS, J. R., 1947.—“Progress of the *Diphyllobothrium* epizootic at Poulaphouca Reservoir, Co. Wicklow, Ireland.” *22* (1), 13–28.
- c. CLAPHAM, P. A., 1947.—“On *Viannella africana* n.sp., *Cheilospirura falconis* n.sp., and *Oesophagostomum tridentatum* Maplestone, 1932.” *22* (1), 29–36.
- d. CLAPHAM, P. A., 1947.—“On the identification of some species of *Trichostrongylus*.” *22* (1), 37–46.
- e. CLAPHAM, P. A., 1947.—“On the occurrence of *Davainea madagascariensis* on the African mainland.” *22* (1), 47–48.
- f. YOUNG, M. R., 1947.—“The incidence of *Trichinella spiralis* at necropsies in England.” *22* (1), 49–60.

(104a) Goodey brings together the evidence obtained by other workers and himself, to show that *Anguillulina dipsaci* attacking oats, onions, field beans, parsnips and rhubarb, is one and the same biological race. He also shows that the parasite attacks certain common weeds which serve as reservoir hosts in the absence of susceptible crops. Making use of such infested weeds he was able to effect the successful transference of the parasite, of oat/weed origin, to onions and field beans. From infested scarlet pimpernel plants, of onion plot origin, the parasite passed over successfully to oats and field beans. Though red clover seedlings are invaded by this race of the parasite, the latter fails to attain sexual maturity in red clover seedlings which are not successfully parasitized by it.

T.G.

(104b) Two species of *Diphyllobothrium*, tentatively identified as *D. dendriticum* and *D. ditremum* respectively, were involved in an epizootic in trout in a newly-formed reservoir on the River Liffey in Ireland. A seasonal mortality from peritonitis in the trout was observed, which reached a maximum in the summer months and was attributed to the increased activity of plerocercoids due to rise in temperature. The avian definitive hosts of the parasites were determined both by experiment and by examining 22 species of the local bird fauna. *D. dendriticum* was found in *Larus marinus*, *L. fuscus* and *L. argentatus*, and *D. ditremum* in *Phalacrocorax carbo*, *P. graculus* and *Ardea cinerea*. The crustacean intermediaries, *Cyclops strenuus abyssorum* and *Diaptomus gracilis*, were determined by feeding experiments with oncospheres, which gave negative results with *Cyclops viridis* and *C. albidus*. Strong evidence is adduced that the trout became infected secondarily by swallowing infected sticklebacks (*Gasterosteus aculeatus*) of which 13·8% of those examined harboured plerocercoids, usually as a single infection. It is believed that only the plerocercoids of *D. dendriticum* caused mortality in the trout, both on morphological evidence and on the feeding habits of the definitive hosts.

J.J.C.B.

(104c) *Viannella africana* n.sp., an intestinal parasite of *Thryonomys swinderianus* in Africa, has structures suggesting affinities with the genera *Viannella* and *Impalaia* but is included among the species of *Viannella* because of its bursal structure, the spiral coiling of the body, and the rodent host. It resembles *Impalaia* in the structure of the spicules and the presence of a gubernaculum. *Cheilospirura falconis* n.sp. is a parasite of *Falco tinnunculus* in Palestine and can be recognized by the arrangement of the caudal papillae and by the structure of the cordon. In a redescription of *Oesophagostomum tridentatum* particular attention has been given to the structure of the oesophageal infundibulum.

P.A.C.

(104d) A means of isolating the spicules of *Trichostrongylus* spp. by using weak alkali is described. A description is given of the spicules and bursae of seven species which have been isolated intact by this method.

P.A.C.

(104e) The presence of *Davainea madagascariensis* on the mainland of Africa is recorded, the identification being based on gravid segments found in the stool of a human being in South East Africa.

P.A.C.

(104f) Examination of 472 human diaphragms from Wolverhampton, Birmingham, Cambridge, Bristol, Cardiff, Llandough and Leeds revealed 51 or 10·81% positive for *Trichinella spiralis*. A “digest” technique was employed, which is described in detail. The infections

were of all ages, from unencysted larvae to thick-walled calcified cysts with dead larvae. The presence in certain instances of definite double infections shows that one infection does not confer permanent immunity. Statistical analysis of the results revealed no significant difference in sex incidence nor between incidences in different age-groups, but an increase in the incidence of thick-cysted infections of long standing was apparent with increasing age.

J.J.C.B.

105—Journal of Infectious Diseases.

- a. CULBERTSON, J. T., ROSE, H. M. & OLIVER-GONZALEZ, J., 1947.—“Skin tests in schistosomiasis mansoni with antigen from heterologous worms (*Pneumonoece*; *Planaria*).” *80* (2), 218-221.

(105a) Comparative skin tests on ten patients suffering from schistosomiasis mansoni were made with extracts of *Pneumonoece medioplexus* (worm powder diluted 1 : 1,000) and *Planaria maculata* (worm powder diluted 1 : 200), and with *Schistosoma mansoni* antigen (worm powder diluted 1 : 10,000). Twelve controls failed to respond to these antigens. *Pneumonoece medioplexus* antigen gave seven positives, the *Planaria* antigen gave nine positives and the *S. mansoni* antigen gave eight positives. The *Pneumonoece* powder could be diluted 20,000 times before skin response was negative while that from *Planaria* failed when diluted 1,000 times.

R.T.L.

106—Journal of Laboratory and Clinical Medicine.

- a. LILLIE, R. D., 1947.—“Reactions of various parasitic organisms in tissues to the Bauer, Feulgen, Gram, and Gram-Weigert methods.” *32* (1), 76-88.

(106a) Sharply stained nuclei were demonstrated by the Feulgen method in the eggs, larvae and adults of *Schistosoma mansoni* and *S. japonicum*, in the larvae and adults of tapeworms, roundworms and *Onchocerca volvulus*, and in the eggs and larvae of *Capillaria hepatica*. Weigert-positive, Gram-negative material was seen in the shells of schistosome eggs and in the opercular plugs of *Capillaria* eggs. Bauer-positive polysaccharides digestible with ptyalin and malt diastase were present in the egg cytoplasm of *C. hepatica*. Bauer-positive material resistant to ptyalin and malt diastase occurred in the shells of *S. mansoni* and *S. japonicum*, and in the opercular plugs of *C. hepatica*.

R.T.L.

107—Journal of the Linnean Society. (Zoology).

- a. BAYLIS, H. A., 1947.—“Some roundworms and flatworms from the West Indies and Surinam. I. Nematodes and Acanthocephala.” *41* (280), 394-405.
b. BAYLIS, H. A., 1947.—“Some roundworms and flatworms from the West Indies and Surinam. II. Cestodes.” *41* (280), 406-414.

(107a) Twenty-six nematodes and two acanthocephalans are listed. Of these two are new, viz., *Amplicaeum alatum* n.sp. from *Tupinambis nigropunctatus* in Surinam, and *Heligmodendrium aripense* n.sp. from *Sciurus aestuans* in Trinidad. *A. alatum* is distinguished by the presence of broad cervical alae from the eight known species, all of which occur in the Old World except possibly *A. excavatum*; this, however, is readily distinguishable by its short spicules and no less than 55-58 pairs of pre-anal and six pairs of post-anal papillae. *H. aripense* is distinguished from the six known species of *Heligmodendrium* by the length of the spicules. *Ancylostoma brasiliense* and *A. caninum* are recorded from a new host, *Euprocyon cancrivorus*, near Paramaribo. *Parabronema bonnei* and *Skrjabinofilaria skrjabini* are redescribed and figured.

R.T.L.

(107b) Five cestodes from the West Indies and Surinam, including *Proteocephalus appendiculatus* n.sp. from *Tupinambis nigropunctatus*, and *Raillietina (R.) alouattae* n.sp. from *Alouatta macconnelli*, are described. There were fragments of an abnormal *Diphyllobothrium* with 2-7 cirrus sacs arranged in longitudinal series and with two or three uteri containing eggs.

R.T.L.

108—Journal of the Marine Biological Association of the United Kingdom.

- a. REES, W. J., 1947.—“A cercaria of the genus *Haplocladus* from *Nucula nucleus* (L.).” 26 (4), 602–604.

(108a) A bifid-tailed cercaria showing the unbranched intestine and the particular position of the rudiments of testes and ovary which are characteristic of the genus *Haplocladus* occurred in 12 out of 16 specimens of *Nucula nucleus* collected at Plymouth. It may be the larval stage of *H. typicus* which occurs locally as adult in *Caranx trachurus*. R.T.L.

109—Journal of the Ministry of Agriculture. London.

- a. STANILAND, L. N., 1947.—“Hot-water treatment of plants.” 54 (6), 278–282.

(109a) Staniland gives detailed illustrated particulars for the construction and use of a home-made hot-water bath for the treatment of bulbs suffering from eelworm or bulb-fly attack, and chrysanthemum stools affected with chrysanthemum eelworm. T.G.

110—Journal of the National Malaria Society.

- a. TOFFALETI, J. P. & KING, W. V., 1947.—“Some records of mosquito dissections in northern New Guinea.” 6 (1), 32–36. [Spanish summary pp. 35–36.]

(110a) Filarial infections were found in the thoracic muscles or head of 20 out of 203 specimens of *Anopheles punctulatus* forms collected in the Hollandia area in northern New Guinea. The infection rates in the three forms were as follows: *A. p. punctulatus*, 8·3%; *A. p. farauti*, 46·2%; intermediate forms, 7·1%. Amongst culicines, six specimens out of 268 *Armigeres proboscideus* and one of 13 *Aedes* (*Aedes*) sp. contained immature filariae in the thoracic muscles. J.J.C.B.

111—Journal of the Palestine Arab Medical Association.

- a. TORRANCE, H. W., 1947.—“Reminiscences and reflections on hydatid disease.” 2 (4), 87–97.

(111a) Although few writers have recently reported cases of hydatid in Palestine, Torrance states that his father treated several cases 65 years ago. A table is given showing the numbers of cattle, sheep and goats slaughtered annually during 1936 to 1945 in the Municipal Abattoir at Tiberias, and the incidence of hydatid in each species. The total number examined was 45,188 of which 2% were infected. The author remarks that patients rarely show the hydatid “thrill”. A clinical diagnosis of hydatid is one of probability not certainty. R.T.L.

112—Journal of Parasitology.

- a. VAN CLEAVE, H. J., 1947.—“The Eoacanthocephala of North America, including the description of *Eocollis arcanus*, new genus and new species, superficially resembling the genus *Pomphorhynchus*.” 33 (4), 285–296.
- b. VAN CLEAVE, H. J., 1947.—“The acanthocephalan genus *Mediorhynchus*, its history and a review of the species occurring in the United States.” 33 (4), 297–315.
- c. RAUSCH, R., 1947.—“*Andrya sciuri* n.sp., a cestode from the northern flying squirrel.” 33 (4), 316–318.
- d. WARDLE, R. A., McLEOD, J. A. & STEWART, I. E., 1947.—“Lühe’s ‘Diphyllobothrium’ (Cestoda).” 33 (4), 319–330.
- e. ALLEN, R. W., 1947.—“The thermal death point of cysticerci of *Taenia saginata*.” 33 (4), 331–338.
- f. LARSH, Jr., J. E., 1947.—“The rôle of reduced food intake in alcoholic debilitation of mice infected with *Hymenolepis*.” 33 (4), 339–344.
- g. LIE KIAN JOE, 1947.—“Trichostrongylus infection in man and domestic animals in Java.” 33 (4), 359–362.
- h. DILLER, W. F., 1947.—“Notes on filariasis in Liberia.” 33 (4), 363–366.
- i. YOLLES, T. K., MOORE, D. V., DeGIUSTI, D. L., RIPSON, C. A. & MELENNEY, H. E., 1947.—“A technique for the perfusion of laboratory animals for the recovery of schistosomes.” 33 (5), 419–426.
- j. KAGAN, I. G., 1947.—“A new species of *Renifer* (Trematoda) from the kingsnake, *Lampropeltis getulus*, with an emendation of the genus *Renifer* Pratt, 1903.” 33 (5), 427–432.

- k. BAILEY, W. S., 1947.—“Observations on the rôle of *Tenebrio molitor* as an intermediate host for *Hymenolepis nana* var. *fraterna*.” 33 (5), 433–434.
 l. RAUSCH, R., 1947.—“*Bakererpes fragilis* n.g., n.sp., a cestode from the nighthawk (Cestoda: Dilepididae).” 33 (5), 435–438.
 m. CHÄNDLÉR, A. C., 1947.—“The anatomy of *Mesocestoides*—corrections.” 33 (5), 444.
 n. FOWLER, J. A., 1947.—“A new host for *Clinostomum metacercariae*.” 33 (5), 444.

(112a) *Eocolpis arcanus* n.g., n.sp. is an acanthocephalan parasite of the intestine of freshwater fishes, particularly *Lepomis macrochirus* and *Pomoxis nigro-maculatus* in Illinois. The proboscis hooks are arranged in three circles with six hooks in each and the anterior end of the trunk is tapered to form a false neck with an inflated trunk bulb. It is a member of the family Centrarchidae though superficially it resembles *Pomphorhynchus*, but the points of resemblance arise not from phylogenetic relationship but from parallel evolution. P.A.C.

(112b) Van Cleave shows that the generic names *Echinorhynchus* in part, and *Gigantorhynchus* in part, with *Heteroplus*, *Empodus*, *Micracanthorhynchus* and *Leiperacanthus*, are all synonyms of *Mediorhynchus* of which *M. papillosum* is the genotype. This genus is parasitic in the intestine of various birds and although it is widely spread, many species are confined to comparatively small areas. In the U.S.A. *M. grandis*, *M. papillosum* and *M. robustus* have been reported. P.A.C.

(112c) *Andrya sciuri* n.sp. from the small intestine of *Glaucomys sabrinus macrotis* in Wisconsin can be recognized by the large number of the testes which spread beyond the lateral margins of the excretory canals on both sides, being, however, more abundant aporally. P.A.C.

(112d) Lühe's genus *Diphyllolothrium* is a cumbersome group containing more than 70 species, many being of doubtful validity. Wardle, McLeod & Stewart have examined specimens found in seals and sea-lions in Canadian and Alaskan waters, and have established a new genus *Cordicephalus*, with four species *C. phocarus* (Fabricius, 1780), *C. tectus* (Linstow, 1892), *C. arctocephalinus* (Johnston, 1937) and *C. quadratus* (Linstow, 1892). They discard Lühe's *Diphyllolothrium* and distribute the species among the more easily recognizable genera *Diphyllolothrium* Cobbold, 1858, *Cordicephalus* n.g., *Diplogonoporus* Loennberg, 1892, *Glandicephalus* Fuhrmann, 1921, *Adenocephalus* Nybelin, 1931, *Spirometra* Mueller, 1937, and *Dibothrioccephalus* Lühe, 1899. P.A.C.

(112e) Cysticerci of *Taenia saginata* heated slowly to a temperature of 54°C. were able to evaginate when placed in taurocholate solution and the flame cells showed normal activity. A small percentage of those heated to 55°C. evaginated partially but none showed active flame cells. Heating to 56°C. stopped all activity and they were afterwards digested when passed through the human intestine. When heated in meat cysticerci apparently withstood a temperature of 50°C. When heated to 55°C. they could evaginate but the flame cells showed no activity, and some were afterwards digested in the intestine. Higher temperatures killed completely. P.A.C.

(112f) Previous work has shown that alcohol consumption lowers the resistance of mice to infestation with *Hymenolepis nana* var. *fraterna*. Larsh now shows that this action is indirect and is the result of reduced food intake. Injections with vitamins increased the resistance even in fasting alcoholic animals. P.A.C.

(112g) *Trichostrongylus colubriformis* and, less frequently, *T. axei*, occur in man in Java, usually in small numbers in the duodenum and upper part of the jejunum, rarely in the stomach. Forty-nine out of 119 Indonesians and 6 out of 32 Chinese examined were positive. There were mixed infections in 11 of the Indonesians. Human volunteers were successfully infected *per os* with larvae of *T. colubriformis* from the goat, but not with larvae of *T. axei* from cattle. No evidence of cutaneous infection could be obtained experimentally. R.T.L.

(112h) Diurnal and nocturnal blood surveys for filariasis were carried out on Liberian natives. Day-time blood smears from 2,134 showed 14 with *Wuchereria bancrofti* and two with *Acanthocheilonema perstans*, while night-time blood smears from 955 showed 8.8% positive for *W. bancrofti* and one with *A. perstans*. Many cases of elephantiasis were observed, of which

scrotal enlargement was the principal type. A blood survey of 431 American soldiers who had been stationed in Liberia for a year or more proved negative. Dissections of 649 mosquitoes, mostly *Anopheles gambiae*, gave evidence that this species is the probable vector of *W. bancrofti* in the area.

J.J.C.B.

(112i) A reliable technique is described for removing schistosome worms from experimentally infected animals. It is also applicable to younger worms. Citrated saline is perfused through the mesenteric-portal system. The worms will survive for several hours at room temperature and for several days at 4°C. if transferred to physiological saline solution. The method is a modification of the technique described by Faust & Meleney in 1924, and provides a continuous flow of the perfusing fluid and an arrangement of the apparatus to admit of several animals being treated simultaneously.

R.T.L.

(112j) *Renifer floridanus* n.sp. is described by Kagan from a kingsnake (*Lampropeltis getulus floridana*) in Florida. It shows a close relationship with *R. kansensis*, *R. septicus* and *R. ophiboli* which are redescribed. *R. serpentis* is accepted as a valid species of *Renifer*. The generic diagnosis is emended to include *Neorenifer*.

R.T.L.

(112k) *Tenebrio molitor* has been used successfully by Bailey as an intermediate host of *Hymenolepis nana* var. *fraterna*. Cysticercoids recovered 12 days after infection proved infective to mice.

R.T.L.

(112l) In an eastern night hawk (*Chordeiles m. minor*) at Marion, Ohio, Rausch found numerous cestodes named *Bakererpes fragilis* n.g., n.sp. It belongs to the Dilepidinae. It differs from other genera in this subfamily in the unique arrangement of the genital ducts.

R.T.L.

(112m) Chandler draws attention to the work of Byrd & Ward (1943) which he had overlooked in a paper [Helm. Abs., 15, No. 112d] on the anatomy of the reproductive system of *Mesocestoides latus*.

R.T.L.

(112n) Metacercariae of *Clinostomum* sp. occur in the spotted salamander (*Ambystoma maculatum*) from the Potomac River, and probably originated from a colony of yellow-crowned night herons.

R.T.L.

113—Journal of the Royal Egyptian Medical Association.

- a. MAKAR, N. & FAWZY, R. M., 1947.—“Bilharzial carcinoma of the urinary bladder—a note on some unusual cases.” 30 (5), 261–266.
- b. BISHR, M. S., 1947.—“A case of pulmonary hydatid cyst with asthma.” 30 (7), 341–346.

114—Journal of the Royal Horticultural Society.

- a. WILSON, G. F., 1947.—“The chrysanthemum eelworm and its control.” 72 (9), 364–369.

(114a) This is a further paper by Fox Wilson on the chrysanthemum eelworm, its biology, symptoms of attack and measures for control. He gives a valuable step-by-step account of the warm water treatment of washed stools, prior to replanting in clean soil for the production of cuttings, and of the necessary hygienic measures to be adopted for the raising of eelworm-free cuttings.

T.G.

115—Journal of the Royal Sanitary Institute.

- a. ALLEN, C. G., 1947.—“Some conditions affecting the liver in food animals.” 67 (5), 465–473. [Discussion pp. 469–473.]

(115a) The liver of food animals may be damaged by helminths which develop there, e.g. *Fasciola hepatica*, *Echinococcus* cysts, *Cysticercus tenuicollis*, *C. bovis* and *C. celluloseae*, or which invade the liver by migration into the bile ducts from the alimentary canal, e.g. *Ascaris lumbricoides*. Allen mentions that the livers of 16% of the cattle killed at the Birmingham Abattoir are condemned in whole or in part for fluke infestation.

R.T.L.

116—Journal of the South African Veterinary Medical Association.

- a. MARTINAGLIA, G. & BRANDT, F. A., 1947.—“Cysticercosis of the impala or rooibok (*Aepyceros melampus*) with reference to meat hygiene.” 18 (1), 20-27.

(116a) Impala (*Aepyceros melampus*) slaughtered for food at Johannesburg market were found to be infected with an intramuscular cysticercus named *C. impalae* n.sp. Macroscopically it is indistinguishable from *C. cellulosae* but the hooklets differ in size and shape from those of *C. cellulosae*, the small hooklets having their guards deeply bifurcated. Cysticerci occurred also in the blue wildebeest (*Connochaetes taurinus*). R.T.L.

117—Journal of the Tennessee Academy of Science.

- a. TODD, A. C., 1947.—“On *Capillaria bursata* Teixeira de Freitas and Lins de Almeida, 1934.” 22 (3), 191-193.
 b. JONES, A. W. & WARD, H. L., 1947.—“Chromosomes of *Macracanthorhynchus hirudinaceus*, the giant thorny-headed worm.” [Abstract of paper presented at the 8th Annual Meeting of the Association of Southeastern Biologists, Emory University, Georgia, April 18-19, 1947.] 22 (3), 198.

(117a) From material collected from chickens in Tennessee, Todd has made a detailed study of the range of size of *Capillaria bursata*. Mature females vary from 19.32-38.76 mm. in length as compared with 24-26 mm. reported from Brazil by Teixeira de Freitas & Lins de Almeida in 1934. R.T.L.

(117b) The chromosomes of *Macracanthorhynchus hirudinaceus* are in two sets of three, making the diploid complement six. In the male the two long chromosomes are heteromorphic. The chromosome number appears to be constant and their relatively large size makes their detailed study possible. R.T.L.

118—Journal of Tropical Medicine and Hygiene.

- a. PAYNE, E. H. & SANCHES A., A., 1947.—“A short statistical study of 60,000 dispensary patients treated in the interior of Brazil, 1944-1945. (North Central Minas Geraes, Goias, and North-West Bahia.)” 50 (5), 90-93.
 b. ERFAN, M., 1947.—“Hepatic bilharziasis.” 50 (6), 104-109.
 c. CAWSTON, F. G., 1947.—“Notes on schistosomiasis from South Africa.” 50 (8), 160-161.
 d. ANON, 1947.—“Filariasis in U.S. Marines.” 50 (10), 189.

(118a) Of the total number of patients treated at 13 dispensaries installed in 1943 in the mica region of North Central Minas Geraes and at nine dispensaries established in 1944 in quartz-producing centres in Goias, 6,524, forming 11%, were diagnosed as harbouring intestinal helminths. A chart shows the monthly fall during 1944 and 1945 as a result of mass treatment with anthelmintics and the use of control measures. It would appear that mass infection occurred during the warm moist season following the heavy rains. No figures are given for Bahia. R.T.L.

(118b) Hepatic bilharziasis is a chronic disease characterized in Egypt by hepatic and splenic enlargement followed by hepatic cirrhosis and ascites. It results from the deposition of the eggs of *Schistosoma mansoni* in the liver where they occur as emboli from the mesenteric veins. The pathogenesis of the splenomegaly is attributed partly to portal obstruction and partly to toxic substances produced by the worms or from the disintegration of their eggs. The ascites is due to portal obstruction but hypoproteinaemia is an important contributory cause. The clinical symptoms, pathology and differential diagnosis are discussed. R.T.L.

(118c) Although drought conditions in South Africa favour *Physopsis africana*, prolonged drought resulted in large numbers dying from desiccation. There are numerous larval trematodes which may be mistaken for schistosome cercariae. Cawston quotes a verbal opinion of Oliver-González that claims of cure which rest on the skin test alone are not warranted in regions where schistosomiasis is endemic. Although some rare eye conditions of the conjunctiva and lens have been noted in schistosomiasis cases in Egypt, these lesions have not been reported among infected stock in India. R.T.L.

(118d) This editorial comments on the mistake of allowing over 38,000 fit U.S. Marines, under training 1,000 miles from the nearest Japanese, to live in the Pacific without adequate protection against filariasis and in close contact with a heavily infected native population. It was also a mistake to label those who developed minimal signs of infection as "filariasis" instead of "lymphangitis" or "lymphadenopathy", for over 10,000 men fit for service were in consequence returned to the U.S.A. unnecessarily and became actual or potential psycho-neurotics. The estimated cost of these mistakes is not less than 100 million dollars. Against this loss is set the knowledge gained on the transmission, early symptoms and pathology, and the chemotherapy of filariasis.

R.T.L.

119—Lancet.

- a. CAWSTON, F. G., 1947.—"Schistosomiasis." [Correspondence.] Year 1947, 2 (6474), 489.

120—M.S.C. Veterinarian. Michigan State College.

- a. HAWKINS, P. A. & DUNLAP, J. S., 1947.—"Strongyloidiosis in the dog." 7 (3), 118-119, 131.

(120a) Hawkins & Dunlap report two cases of naturally acquired *Strongyloides stercoralis* infection in dogs from Ohio. Although a severe and slightly bloody diarrhoea, loss of appetite and weight with emaciation occurred, these symptoms could not be reproduced experimentally.

R.T.L.

121—Mededelingen van de Landbouwhogeschool en de Opzoekingsstations van de Staat te Gent.

- a. BRANDE, J. VAN DEN & ONSEM, J. VAN, 1947.—"Het stengelaaltje Ditylenchus, *Dipsaci*, van de rogge." 12 (2/3), 213-233. [French, English & German summaries pp. 227-229.]

(121a) Van den Brande & Van Onsem have investigated the stem disease of rye caused by *Anguillulina dipsaci*. Vertical and horizontal migration of the parasite in soil was studied, and the probable means of dispersal, such as by water, by stable manure, and by weeds acting as reservoir hosts, are discussed. Other factors which were studied in relation to the disease were soil structure, weather, time and depth of sowing, and the influence of organic manures. The effects of cyanamide, sulphate of potash and lime on crop yields were studied. Only Ottersum rye was found to show some resistance to the disease.

T.G.

122—Medical Journal of Australia.

- a. DAKIN, W. P. H. & CONNELLAN, I. D., 1947.—"Asiatic schistosomiasis: an outbreak in the Royal Australian Air Force." 34th Year, 1 (9), 257-265.

(122a) This article deals with the diagnostic methods and treatment used to control an outbreak of schistosomiasis japonica in a R.A.A.F. airfield construction squadron on Leyte. 226 men received treatment. A shortened course in which 2 gm. of tartar emetic may be given in 3½ weeks is described.

R.T.L.

123—Mycologia.

- a. DRECHSLER, C., 1947.—"A nematode-strangling *Dactylella* with broad quadrisepitate conidia." 39 (1), 5-20.

(123a) Drechsler gives an illustrated description of a new hyphomycetous fungus, *Dactylella coelobrocha* n.sp., which captures small nematodes by means of hyphal loops, mostly produced below the surface of the culture medium. The fungus came from decaying leaves taken from the floor of a beech wood (*Fagus grandiflora*) near Webster, N.Y., after a small quantity of the detritus had been placed on the surface of an old maize-meal agar plate. The nematodes captured included species of *Plectus*, *Wilsonema* and *Rhabditis*.

T.G.

124—Nature. London.

- a. MARTIN, G. C., 1947.—“‘DD’ as a means of controlling *Heterodera rostochiensis* (Woll.).” [Correspondence.] 160 (4073), 720.

(124a) In a preliminary report Martin records the effectiveness and comparative cheapness of crude D-D (1, 2-dichloropropylene and 1, 3-dichloropropane) as a soil fumigant against *Heterodera rostochiensis*, but states that it is too expensive to be economically practicable in England. It is more potent in sandy than in peaty soils: in the former, when injected at 9 inches, it caused a 95% reduction in plant infection in the field. Injection at 3 inches may give better results and with soil “seals” 99% reduction of plant infection is claimed. D-D is effective under widely different soil temperature and moisture conditions; it also prevents the growth of some weeds and kills wireworms, cutworms and centipedes. Viable cysts of the potato root eelworm have been found on Scottish seed potatoes imported into Southern Rhodesia and also in fields in Lincolnshire which had not grown potatoes for 11 years. M.T.F.

125—New England Journal of Medicine.

- a. LOWE, C. U. & AUGUSTINE, D. L., 1947.—“Creeping eruption in New England. A report of two cases.” 236 (18), 658–661.

(125a) Of two cases of creeping eruption reported in children, the first was acquired in Boston and infection was definitely traced to *Ancylostoma caninum* infection in a pet dog. The second, which occurred in Savannah, Georgia, was attributed to *A. braziliense* owing to familial association with cats. R.T.L.

126—New Zealand Journal of Science and Technology. A. Agricultural Section.

- a. JACKS, H. & WRIGHT, L., 1947.—“Soil disinfection. VI. An injector for applying small dosages of volatile fumigants to soils.” 28 (5), 328–331.

(126a) An instrument is described and figured which has a 98% efficiency in injecting into the soil small doses of highly volatile fumigants such as chloropicrin, Shell D-D, carbon disulphide, methyl bromide, and ethylene dichloride. R.T.L.

127—New Zealand Medical Journal.

- a. PRIOR, I. A. M., 1947.—“Hydatid cyst of the lung of unusual size. Report of a fatal case.” 46 (252), 109–113.

128—Ohio Journal of Science.

- a. KAY, M. W., 1947.—“*Otodistomum plicatum* n.sp. (Trematoda, Digenea) from *Hexanchus griseus* (Bonnaterre).” 47 (2), 79–83.

(128a) *Otodistomum plicatum* n.sp., collected from *Hexanchus griseus* at Friday Harbour, Washington, is described. Its most clear-cut points of divergence are the relatively long cirrus pouch and unusually large egg. R.T.L.

129—Phytopathology.

- a. STARK, Jr., F. L. & LEAR, B., 1947.—“Miscellaneous greenhouse tests with various soil fumigants for the control of fungi and nematodes.” 37 (10), 698–711.
 b. VALLEAU, W. D. & JOHNSON, E. M., 1947.—“The relation of meadow nematodes to brown root-rot of tobacco.” 37 (11), 838–841.
 c. ANDERSON, P. J., 1947.—“Nematodes on tobacco in Connecticut.” [Abstract of paper presented at the 1st Annual Meeting of the Northeastern Division of the American Phytopathological Society, Amherst, Mass., November 26 and 27, 1946.] 37 (11), 847.

(129a) Chemicals were tested against *Heterodera marioni* root galls mixed with soil in one-gallon crocks, tomato or squash plants being grown as a test crop. The most powerful nematicide used was ethylene dibromide; in larger doses (1.0 ml. and over per one-gallon crock) D-D mixture and methyl bromide were also excellent. Chloropicrin was much less effective in penetrating unrotted root galls than were D-D and methyl bromide, the last

penetrating effectively in four hours. *In vitro* tests showed that while immature eggs were killed by chloropicrin, larvae in eggs ready to hatch were resistant; all stages, however, were killed by methyl bromide and D-D. Chloropicrin will thus give comparatively poor results if applied to soil too soon after an infected crop has been lifted, or when many of the worms are at the resistant stage. The maximum nematicidal effect of chloropicrin, methyl bromide and D-D mixture was at the level of injection in the soil; the last two were also effective at the soil surface, but chloropicrin had its least effect in the top two inches of soil and methyl bromide had much reduced efficacy below the injection level. The persistence of a fumigant in the soil is shown to depend partly on its vapour pressure as well as on the dosage and the soil conditions. Chloropicrin was the most effective fungicide.

M.T.F.

(129b) Valleau & Johnson describe the symptoms of brown rot of tobacco roots and show that the meadow nematode, *Pratylenchus pratensis*, is often abundant in affected roots. Tobacco crops appear to be particularly susceptible to brown rot when they follow crops whose roots are liable to infestation with meadow nematodes. While presenting no proof that such nematodes are the real cause of the trouble, the authors suggest that there is good evidence that the worms cause extensive injury to the roots of tobacco and several other crop plants.

T.G.

(129c) Anderson reports *Heterodera marioni* as a serious pest on tobacco roots in a field at Windsor, Connecticut, a region from which this pest has not previously been reported. In other fields two other nematodes were found associated with serious root deterioration of tobacco plants: one of these nematodes was identified as *Pratylenchus pratensis*.

T.G.

130—Plant Disease Reporter.

- a. CLAYTON, C. N., 1947.—“Roots of Shalil peach seedlings are not resistant to all races of the root-knot nematode.” 31 (4), 153–154.
- b. FENNE, S. B., LEFEBVRE, C. L., HENDERSON, R. G., TYSDAL, H. M. & SMITH, T. J., 1947.—“Alfalfa and clover disease survey in Virginia.” 31 (8), 301–303.

(130a) Clayton shows that Shalil peach, used as an understock and considered to be resistant to *Heterodera marioni*, has been found attacked by the parasite in orchards of North Carolina. In order to test whether susceptibility was connected with genetic variability of the rootstocks, or with the presence of different races of the parasite, pot experiments were carried out. Soil was used from around six trees in each of two locations in five orchards where root-knot was present and peach seedlings, both of Shalil and Natural, were grown in the pots. The results of these preliminary tests tend to show that root-knot infestation on Shalil stocks is more probably the result of attack by races of the parasite capable of infesting, than of variation in the host.

T.G.

(130b) Fenne et al., in a survey of diseases affecting alfalfa and clover in Virginia, found that *Heterodera marioni* was causing severe injury to red clover in a field in Botetourt County. In adjoining alfalfa fields where uneven stands were observed the plants showed no typical symptoms of root-knot attack but were found on later examination in the laboratory to have a number of inconspicuous galls on the roots.

T.G.

131—Plant Disease Reporter. Supplement.

- a. CHRISTIE, J. R., 1947.—“Soil fumigation for control of nematodes and other soil-inhabiting organisms.” No. 170, pp. 170–189.

(131a) Information is presented on many practical aspects of soil fumigation, and the needs of the small-scale operator are catered for. A few of the various headings under which information is provided are: chemicals for disinfecting soils, their characteristics and efficacy as nematicides, fungicides etc., their cost and methods of application in closed bins or open piles; methods employed when fumigating greenhouse beds, seed beds and small-scale field plots; application equipment, preparation of soil and procedure to be followed in applying chemicals, as well as subsequent treatment of soil.

T.G.

132—Proceedings of the Helminthological Society of Washington.

- a. VAN CLEAVE, H. J., 1947.—“Thorny-headed worms (Acanthocephala) as potential parasites of poultry.” *14* (2), 55–58.
- b. SPINDLER, L. A., 1947.—“The effect of experimental infections with ascarids on the growth of pigs.” *14* (2), 58–63.
- c. RUNKEL, C. E. & KATES, K. C., 1947.—“A new intermediate host (*Protoschelobates seghettii*, n.sp.: Acarina: Scheloribatidae) of the sheep tapeworm, *Moniezia expansa*.” *14* (2), 64–67.
- d. ENZIE, F. D. & JAQUETTE, D. S., 1947.—“The unsuitability of sodium fluoride as an anthelmintic for chickens.” *14* (2), 67–69.
- e. RAUSCH, R., 1947.—“A redescription of *Taenia taxidiensis* Skinker, 1935.” *14* (2), 73–75.
- f. DOUGHERTY, E. C. & HERMAN, C. M., 1947.—“New species of the genus *Parafilaroides* Dougherty, 1946 (Nematoda: Metastomylidae), from sea-lions, with a list of the lungworms of the Pinnipedia.” *14* (2), 77–87.
- g. ALLEN, R. W., 1947.—“The incidence of *Capillaria annulata* in chickens of the Middle West.” *14* (2), 87–88.

(132a) In considering possible acanthocephalan parasites of domestic birds, Van Cleave redescribes *Leiperacanthus gallinarum* and gives good reasons for considering the genus to be a synonym of *Mediorhynchus*. Many species of this genus are parasites of wild birds in the U.S.A. and have opportunities for becoming established in domestic flocks.

P.A.C.

(132b) Spindler finds that the number of *Ascaris lumbricoides* collected at *post-mortem* examination of experimentally infected pigs, bears a direct relationship with the degree of growth retardation. A pig with 20 ascarids gained only 55% as much weight as its uninfested control, while a pig with 109 ascarids actually weighed less at the end of the experiment than at the beginning. Growth was noticeably affected during the period of the invasion of the liver and lungs and again after oviposition had begun, but not particularly during the development of the worms to maturity.

P.A.C.

(132c) Runkel & Kates describe *Protoschelobates seghettii* n.sp., a mite which proved, from experiments at Beltsville, Md., to be a vector for *Moniezia expansa*. It is recognized by the arrangement of the bristles on the rostrum. The other vectors so far reported are *Galumna* spp., *G. nigra*, *G. emarginata*, *G. obrius* and *Scheloribates laevigatus*.

P.A.C.

(132d) Although sodium fluoride has ascaricidal properties it cannot be used for chickens as it is very toxic to them in effective dosage.

P.A.C.

(132e) *Taenia taxidiensis* has been collected from *Taxidea taxus* in Wisconsin and is redescribed. It is the only species of the genus *Taenia* in North America which has a single circlet of rostellar hooks. Rausch suggests that the vector may be a ground squirrel.

P.A.C.

(132f) From captive sea-lions originating from the Californian coast Dougherty & Herman collected a number of lungworms belonging to the genus *Parafilaroides*. The species included *P. decorus* n.sp. from *Zalophus californianus*, *P. nanus* n.sp., *P. prolificus* n.sp. and an unnamed species from *Eumetopias jubata*. Owing to the very degenerate nature of these parasites and the lack of sufficient material, wholly adequate diagnosis cannot be effected. As the most obvious differences observed were in the total length of the body, a table of comparative measurements is given. The six named and one unnamed species of lungworms known in pinnipedes are listed. *Kutassicaulus andreewoi* Skryabin, 1933 is emended to *Otostrongylus andreewae* emend.nov.

R.T.L.

(132g) Of 463 crops from fowls from the Middle West, 9·3% harboured *Capillaria annulata*. Females were twice as abundant as males.

P.A.C.

133—Proceedings of the Indian Academy of Sciences. Section A.

- a. SUBBA RAO, V. & SESHADRI, T. R., 1947.—“Kamala dye as an anthelmintic.” *26* (3), 178–181.

(133a) The total anthelmintic value of Kamala may be due to other components than rottlerin, its chief crystalline component, but this constitutes the most important and powerful toxic component. Weight for weight the best quality of Kamala has less than one-third the toxicity of pure rottlerin.

R.T.L.

134—Proceedings of the Society for Experimental Biology and Medicine.

- a. MAYHEW, R. L., 1947.—“Creeping eruption caused by the larvae of the cattle hookworm *Bunostomum phlebotomum*.” 66 (1), 12–14.

(134a) Small inflamed spots about $\frac{1}{4}$ in. in diameter appeared on the fingers while Mayhew was making experimental inoculations of calves with 3rd stage larvae of *Bunostomum phlebotomum*. Two or three days later, narrow linear tortuous eruptions developed. The area became swollen and intensely itchy, and remained from one to three weeks. The calves appeared to feel similar sensations. The duration of the eruptions and irritation was not so prolonged as with *Ancylostoma braziliense* in man.

R.T.L.

135—Proceedings of the Zoological Society of London.

- a. HAMERTON, A. E., 1947.—“Report on the deaths occurring in the Society's Gardens during the year 1945.” 116 (3/4), 611–623.
 b. PORTER, A., 1947.—“Report of the Honorary Parasitologist for the year 1945.” 116 (3/4), 624–626.

(135a) In a wart hog (*Phacochoerus aethiopicus*) which had lived for $10\frac{1}{2}$ years in the London Zoological Gardens, four large cysticerci $3\frac{1}{2}$, 3 and $2\frac{1}{2}$ inches in diameter were found in the omentum: these were identified as *Cysticercus cellulosae*. *C. tenuicollis* is reported from the liver of a pouched rat (*Cricetomys gambianus*). *Drepanidotaenia* sp. caused intestinal obstruction in a yellow-vented parrot (*Poicephalus senegalus*). Two night vipers (*Causus rhombatus*) died from mass infestation with nematodes and cestodes, and two Schweigger's hinged tortoises (*Kinixys erosa*) from mass infestation with *Oxyuris* sp. A microfilaria occurred in *Lobiaphasis bulweri*.

R.T.L.

(135b) Porter lists a number of helminths collected from animals which died in the London Zoological Gardens in 1945.

R.T.L.

136—Publicações Médicas. São Paulo.

- a. LÔBO, R., 1947.—“Do colo sigmóide na esquistossomose de Manson-Pirajá da Silva.” 18 (7/8), 45, 47–48.

137—Publications de l'Institut Belge pour l'Amélioration de la Betterave.

- a. SIMON, M., 1947.—“Développement actuel et perspectives des mesures de lutte contre le nématode de la betterave.” 15 (3), 77–91. [English & Dutch summaries pp. 88–89.]

(137a) Drawing attention to the dangers to the sugar-beet industry due to the presence of *Heterodera schachtii* in Belgium, Simon reviews the literature relating to the control of both sugar-beet and potato root eelworms. He considers the work which has been done on hatching stimulants, on substances masking the presence of host root excretions in the soil, on the breeding of resistant varieties of beet, on chemical control and on soil fumigants. He concludes by indicating lines of research which should be undertaken in an effort to solve the problem of eelworm disease of sugar-beet in Belgium.

M.T.F.

138—Publications. Tobacco Research Board, Southern Rhodesia.

- a. ANON, 1947.—“Root knot nematode.” No. 10 [Annual Report of the Trelawney Tobacco Research Station for 1946], pp. 29–33.

(138a) After three seasons of resistant crops (sunnhemp, *Crotalaria juncea*, turned in late; maize; velvet beans, stubble turned in) tobacco was less heavily infested with *Heterodera marioni* than tobacco grown on plots following three seasons of susceptible crops (Kaffir beans, turned in late; sunflowers; Kaffir beans, stubble turned in), but the infestation was not less than after only two seasons of resistant crops. A crop of tobacco grown after sunnhemp turned under early (February) was more heavily infested with root-knot than one following sunnhemp turned under late (April), and much more heavily infested than a crop grown after sunnhemp had been harvested and the stubble turned in, the percentage of root-knot in the three cases being 77.5, 58.5 and 43.6 respectively. In another experiment tobacco was grown on infested

land, part of which had grown dhal (*Cajanus indicus*, pigeon pea) for three years while the other part had been under three years of weed fallow. On examining the tobacco for root-knot it was found that the plants following weed fallow had less root-knot than those following dhal, and it is concluded that dhal is of no use as a rotation crop to reduce eelworm infestation. Eight strains of cotton grown on eelworm-infested land showed no significant difference in infestation. Typical root galls were not formed, but only tiny swellings on the smallest fibrous rootlets which soon died off and disintegrated. It is suggested that cotton may serve as a trap crop for *H. marioni*. Five per cent. crude benzene hexachloride containing 0.5% gammexane was broadcast and hoed into infested soil at rates of 85.5-214 lb. of 0.5% gammexane per acre. Sunflowers were grown and examined for root-knot but there was no sign that the gammexane was either lethal or repellent to the eelworms.

M.T.F.

139—Puerto Rico Journal of Public Health and Tropical Medicine.

- a. STOLL, N. R., CHENOWETH, Jr., B. M. & PECK, Jr., J. L., 1947.—“Low incidence of *Enterobius vermicularis* in natives of Guam, M.I.” 22 (3), 235-243. [Also in Spanish pp. 244-253.]
- b. PRATT, C. K. & OLIVER GONZÁLEZ, J., 1947.—“Intradermal reactions to fresh and stored antigens prepared from cercariae of *Schistosoma mansoni*.” 22 (3), 254-256. [Also in Spanish pp. 257-259.]
- c. PONCE PINEDO, A. M., 1947.—“Schistosomiasis mansoni in the Republic of Santo Domingo. With a report of six cases studied.” 22 (3), 308-315. [Also in Spanish pp. 316-324.]
- d. MALDONADO, J. F., & ACOSTA MATIENZO, J., 1947.—“The development of *Schistosoma mansoni* in the snail intermediate host, *Australorbis glabratus*.” 22 (4), 331-373. [Also in Spanish pp. 374-404.]

(139a) Although hookworm, ascaris and whipworm are common infections in the natives of Guam, *Enterobius vermicularis* eggs were found in only 6 out of 634 individuals examined. None were found in 187 necropsies. *Hymenolepis nana* also was absent from the native population, although it occurred in U.S. service personnel stationed on the Island. R.T.L.

(139b) Dry powder made from *Schistosoma mansoni* cercariae, after being stored at 6°C. for 3, 6, 9 and 12 months, retained its potency as antigen. The number of positive reactions was the same as that resulting from the use of fresh material. Further, a 1 : 10,000 dilution of cercarial antigen was over 90% accurate in the diagnosis of *S. mansoni* infections. R.T.L.

(139c) Ponce Pinedo states that the first genuine case of schistosomiasis mansoni discovered in a Dominican was found by him in 1942 and that earlier reports from the Dominican Republic were of imported cases. Since then he has seen over a dozen further cases, all from the Hato Mayor area. The creeks Pañe-pañe and Las Guamas were found to harbour *Australorbis glabratus* of which 5% were infected. The life-cycle was completed experimentally. R.T.L.

(139d) Maldonado & Acosta Matienzo have made a detailed study of the larval stages in the life-cycle of *Schistosoma mansoni* in *Australorbis glabratus*. The structures which previous authors have described in the miracidium as clusters of lateral secretory glands and their ducts, are believed to be ganglionic nerve cells and nerve tracts to the antero-lateral papillae. The authors reject the view of Faust & Meleney (1924) that the miracidia enter through the respiratory aperture of the snail, and that of Gordon *et al.* (1934) that the miracidium forms sporocysts by fragmentation. Many of the miracidia which successfully penetrate the mulluscan host fail to develop into mother sporocysts which are recognizable by the 24th hour. There is no evidence that the mother sporocysts have motility. Daughter sporocysts were formed as cell masses on the 4th day, became motile by the 8th day and began to migrate towards the glandular tissue by the 18th day. The cercariae were fully developed in about a week after the daughter sporocysts had become fully grown and many were ready to leave the snail a month after infection. R.T.L.

140—Quarterly Journal of Pharmacy and Pharmacology.

- a. WOOD, D. R., 1947.—“Observations on the pharmacology of Miracil, a new chemotherapeutic agent for schistosomiasis.” 20 (1), 31–37.

(140a) Wood has confirmed and extended the observations of Kikuth and of Hecht on “miracil-D” (the hydrochloride of 1-methyl-4-diethylaminoethylaminothioxanthone) which appeared in the Combined Intelligence Objectives Sub-Committee, 1945, File XXV, 54. This new chemotherapeutic agent for schistosomiasis is well tolerated by mice, rats and rabbits, although continued oral administration of doses greater than 20 mg. per kg. to rats, 62·5 mg. per kg. to mice and 50 mg. per kg. to rabbits had definite adverse effects. Mice and rats tolerate 20 mg. per kg. given orally repeatedly. Toxic action on liver, kidney and heart is especially likely after prolonged administration. It has not yet been used in man.

R.T.L.

141—Queensland Agricultural Journal.

- a. MATHAMS, R. H., 1947.—“Why cattle chew bones.” 64 (5), 304–307.
b. ANON, 1947.—“Sheep worm control.” 65 (1), 57–58.

(141a) Pica or depraved appetite in cattle is manifested by bone-chewing and is usually due to mineral deficiency, but similar symptoms may be caused by helminth infections.

R.T.L.

142—Report. Department of Agriculture, New Zealand.

- a. BARRY, W. C., 1947.—“Report of Director, Livestock Division.” (1946–47), pp. 7–18.
b. FILMER, J. F., 1947.—“Report of Director, Animal Research Division.” (1946–47), pp. 19–34.

(142a) Phenothiazine must be administered to calves with due regard to their age. Too high dosage rates result in eye conditions, with discharges and rapid loss of condition, and even death may result. It is a valuable remedy if a good standard of feeding and calf husbandry is practised. In lambs and hoggets, too, it gives good results if combined with good nutrition and management. The nutritional aspect of worm control is of paramount importance: the best of the grazing available encourages a natural immunity. Liver-flukes and “black disease” show a tendency to spread in Hawke’s Bay. *Stephanurus dentatus* was found in two pigs at slaughter.

R.T.L.

(142b) The addition of 10% phenothiazine to salt lick renders it unpalatable and lick consumption may be far from uniform. Experimental studies on immunity and resistance to *Haemonchus* infection in lambs showed a marked retardation of growth in the infested group as compared with the controls. Immune serum from the experimentally infected sheep caused precipitates to form around the oral, anal and excretory pores of ensheathed larvae of *Haemonchus*, of the third-stage larvae of trichostrongyles and the filariform larvae of *Strongyloides*. Attempts to break down resistance in sheep by repeated and severe bleeding gave no significant results. The longevity of embryophores of *Echinococcus granulosus* exposed to ordinary climatic conditions is under investigation. Attempts to infect ferrets with *Cysticercus tenuicollis* were unsuccessful. At Ruakura studies on the metabolism of phenothiazine in domesticated animals are in progress, especially in relation to photosensitized keratitis.

R.T.L.

143—Report. Department of Scientific and Industrial Research, New Zealand.

- a. TETLEY, J. H., 1947.—“Research on the internal parasites of sheep.” 21st (1946–47), p. 43.

(143a) Tetley’s research programme for the year 1946–47 was chiefly concerned with the seasonal incidence of helminths on pastures in New Zealand, and in devising apparatus for the direct observation of the free-living stages of *Haemonchus* and other nematode parasites in controlled conditions in the laboratory.

R.T.L.

144—Report of the Kentucky Agricultural Experiment Station.

- a. ANON, 1947.—“Survival of nematode parasites of sheep on pasture.” 59th (1946), p. 14.
- b. ANON, 1947.—“Cause of brown root rot of tobacco.” 59th (1946), pp. 40-41.

(144a) Parasite-free lambs grazed for two weeks in October on a plot of permanent pasture three months after contamination failed to acquire *Haemonchus contortus*, *Ostertagia circumcincta*, *Trichostrongylus* spp., *Nematodirus filicollis* or *Oesophagostomum columbianum*.

R.T.L.

(144b) In brown root-rot plots, tobacco roots, grasses and legumes were heavily infected with *Pratylenchus pratensis*.

R.T.L.

145—Report of the Veterinary Department, Nigeria.

- a. SIMMONS, R. J., 1947.—“Helminthiasis.” (1945), p. 4.

(145a) In Nigeria the death rate in young cattle from helminthiasis (*Haemonchus* and *Oesophagostomum*) is considerable. It is one of the chief causes of emaciation and stunted growth in calves, especially towards the end of the dry season. Ascariasis was common in calves. A coenurus was observed in the lungs of camels in Katsina Province.

R.T.L.

146—Revista Brasileira de Biologia.

- a. MACHADO Filho, D. A., 1947.—“Revisão do gênero *Polyacanthorhynchus* Travassos, 1920 (Acanthocephala, Rhadinorhynchidae).” 7 (2), 195-201.

(146a) Machado revises the genus *Polyacanthorhynchus* established by Travassos in 1920. The species *P. macrorhynchus* from *Arapaima gigas* and *P. rhopalorhynchus* from *Caiman* sp. and from *A. gigas*, a new host, are redescribed.

P.A.C.

147—Revista Brasileira de Medicina.

- a. CANÇADO, J. R., 1947.—“Contribuição ao estudo da esquistosomíase mansônica no Brasil. Dados relativos à sua distribuição no Estado de Minas Gerais.” 4 (1), 31-35.

(147a) Schistosomiasis mansoni occurs in several states in the north-east of Brazil and is especially prevalent in Minas Gerais. It is rare or absent south of Minas. Details of its incidence in various towns are given.

R.T.L.

148—Revista Medica de Chile.

- a. NEGHME, A. & FAIGUENBAUM, J., 1947.—“Nueva modalidad de tratamiento en las teniasis.” 75 (1), 54-57.

(148a) Neghme & Faiguenbaum have used atebrin as an anthelmintic against *Taenia saginata*, *T. solium* and *Hymenolepis nana*. It is administered after a low-residue diet and is followed by a saline purge. It appears to be 83% effective.

P.A.C.

149—Revue d’Élevage et de Médecine Vétérinaire des Pays Tropicaux.

- a. COLBACK, H. R. F. & CORNET, O., 1947.—“Traitement de la syngamose trachéale.” 1 (1), 53.

(149a) By insufflating finely powdered pyrethrum through a small rubber cannula mounted on a vaporizer, Colback & Cornet have cured 95% of poultry infected with *Syngamus trachea*.

R.T.L.

150—Schweizer Archiv für Teilheilkunde.

- a. BOUVIER, G., 1947.—“Observations sur les maladies du gibier en 1946.” 89 (5), 240-254.
- b. AMMANN, K., 1947.—“Onchocercen als Ursache von Lahmheiten, Widerrist- und Genickfisteln beim Pferd.” 89 (7), 325-338.
- c. KREIS, H. A., 1947.—“Helminthologische Probleme bei unseren Haustieren.” 89 (9), 421-437.

(150a) Verminous bronchitis due to *Protostrongylus rufescens* as a frequent cause of death, the occurrence of death from *Fasciola hepatica* and the presence of *Chabertia ovina* and *Cysticercus tenuicollis* in the chamois are reported. *Dictyocaulus viviparus* and *C. tenuicollis* are common and *Chabertia ovina* has been found in the roe-deer. *Dicrocoelium dendriticum* is frequently present in *Lepus timidus* and *L. variabilis*; infections with *Trichuris leporis*, *Trichostrongylus retortaeformis*, *Passalurus ambiguus* and *Protostrongylus commutatus* occur but are seldom heavy. *Opisthorchis felineus*, *Toxocara vulpis*, *Taenia pisiformis* and *Mesocestoides lineatus* were found in the two foxes examined.

R.T.L.

(150b) Ammann gives clinical details of five cases of lameness, fistulous withers and poll-evil in horses from widely scattered districts of Switzerland which, on histological examination, were found to be due to *Onchocerca* infection. Specific diagnosis of the parasite was not made. All the horses had been imported into Switzerland so that, although a suitable intermediate host (*Simulium ornatum*) has been found locally, indigenous infection could not be proved. The importance of intravital diagnosis of *Onchocerca* infestation is stressed: Brucella and *Onchocerca* are often present concomitantly so that both should be suspected in cases of poll-evil and fistulous withers. The only satisfactory treatment is excision of all affected tissue. A.E.F.

(150c) Kreis gives a readable general account of the many problems still to be solved before the control of helminthiases in domestic animals can be mastered. He emphasizes particularly the importance of ecological and bionomic research in relation to biological control methods. He points out the difficulties of specific diagnosis, which is nevertheless a prerequisite to successful treatment, of forms such as the trichostrongylids of sheep and cattle. Recent anthelmintic developments are briefly surveyed.

E.M.S.

151—Science.

- a. OTTO, G. F. & MAREN, T. H., 1947.—“Filaricidal activity of substituted phenyl arsenoxides.” **106** (2744), 105-107.

(151a) Administration intraperitoneally to cotton rats infected with *Litomosoides carinii* of the substituted phenyl arsenoxide, *p*-[bis-(carboxymethylmercapto)-arsino]-benzamide, killed all the adult worms in animals receiving 0.9 mg. arsenic (4.5 mg. drug) per kg. body weight twice a day for six weeks, but failed to reduce the number of microfilariae. Intravenous administration of the drug to dogs with *Dirofilaria immitis* similarly failed to have any effect on the microfilariae but it seemed to be consistently effective against the adult worms in daily doses of 0.23 mg. arsenic (1.15 mg. drug) per kg. or more for two weeks or longer. This seems to be the first record of a drug which kills all the adults of *D. immitis* in dosage rates which appear to be applicable in human filariasis.

J.J.C.B.

152—Science and Culture. India.

- a. BHALERAO, G. D., 1947.—“Applied helminthology, its past and future in India.” **12** (10), Suppl. pp. 2-3.

(152a) Bhalerao summarizes briefly recent achievements in applied helminthology in India, where liver-fluke disease causes more mortality in cattle than any other disease. The removal of water weeds twice yearly is an efficient means of mollusc control. Cercarial dermatitis is reported for the first time in India. The schistosome of the elephant is stated to belong to *Ornithobilharzia*, not to *Schistosoma*. *Cercaria indica* XXVI is the larval stage of *Cotylophoron cotylophorum*. 20% of the Hindu coolies at Mukteswar have *Taenia saginata*. Hydatid occurs in 70% of the cattle in some localities, 90% of the cysts being sterile. As 5-10% of young chicks die of blackhead, the control of heterakid worms in poultry is a highly economic problem. The colossal economic loss suffered in India through the ravages of worm parasites leads Bhalerao to urge the creation of adequate facilities for their study.

R.T.L.

153—Scottish Agriculture.

- a. MORGAN, D. O. & SLOAN, J. E. N., 1947.—“Researches on helminths in hill sheep with special reference to seasonal variations in worm egg output.” *27* (1), 28–33.

(153a) Morgan & Sloan carried out a study of the helminths in two flocks of hill sheep in a “Border” district of Scotland. The investigation involved a monthly egg-count on each sheep in the two flocks for a period of two years. It was found that the worm egg output increases rapidly during March and April and reaches its peak about May or early June; after that there is a gradual fall to a low level in mid-winter. The spring increase occurred in all age groups but was far more pronounced in the younger animals. The authors advance several possible explanations of the spring rise since it is far from clear that it is due to an increased worm burden.

D.O.M.

154—Scottish Farmer.

- a. RAYSKI, C., 1947.—“Sheep tapeworms and their intermediate hosts.” *55* (2823), 284.

(154a) In this paper delivered at a conference on “Parasites of Hill Sheep”, the author discusses the importance of the tapeworms of the genus *Moniezia* in sheep. He found that 27 species of oribatid mites occur on the Scottish hill pastures but only one, *Scutovortex minutus*, was found to be an intermediate host for these tapeworms in natural conditions. C.R.

155—South African Medical Journal.

- a. CAWSTON, F. G., 1947.—“Schistosomiasis in Southern Africa.” *21* (5), 150–151.

- b. ALVES, W. & BLAIR, D. M., 1947.—“Schistosomiasis: a review of work in Southern Rhodesia in 1946.” *21* (10), 352–357.

(155a) Cawston finds *Schistosoma mansoni* eggs in the stools of Natal patients much more frequently than has been reported hitherto. Prolonged drought has caused a considerable diminution of molluscan vectors in certain parts of South Africa. Schistosomiasis is rare along the few rivers which flow towards the Atlantic, passing through uninhabited sandy deserts, whereas it is far more prevalent along the rivers which empty into the Indian Ocean as these are lined with human dwellings.

R.T.L.

(155b) Alves & Blair describe the field application of the “Public Health Cure” of Alves [see Helm. Abs., 15, No. 59a]. They used the cercarial antigen skin-test as a negative screen, treating all those reacting positively. 8,871 skin-tests of Africans were done throughout the year, positive results being obtained in 71·28%. 5,455 persons of all age groups were treated. Positive results were obtained in 37·25% of 1,377 Europeans (including several hundred soldiers repatriated from West and North Africa, whose infection rate was higher than the average). Copper sulphate treatment of water courses was synchronized with the mass diagnosis and treatment of the population area by area. Based on Alves’ observation [Helm. Abs., 15, No. 233a] that in cold weather cercariae may survive over 120 hours, they suggest that “snail units” should operate during the winter months and should also be trained to carry out mosquito control work against malaria during the summer.

W.A.

156—South African Science.

- a. CAWSTON, F. G., 1947.—“Lymnaea in its relation to human parasites.” *1* (3), 66–67.

(156a) Although Porter (1938) implicated *Limnaea natalensis* as an occasional intermediary of *Schistosoma haematobium*, efforts made over some years to produce infection or to find natural infections have been unsuccessful. Cawston therefore believes that this mollusc should not be regarded as an intermediate host, and should be protected as a natural scavenger except in areas where *Fasciola* is prevalent.

R.T.L.

157—Tasmanian Journal of Agriculture.

- a. GREEN, R. J., 1947.—“Fluke infestation in sheep.” *18* (1), 26–27.

(157a) Sheep in large areas of the Midlands, the North and East Coast districts and the high lake country of Tasmania are subject to infection with *Fasciola hepatica*.

R.T.L.

158—Tijdschrift voor Diergeneeskunde.

- a. JANSEN, J. & PEPERKAMP, C. W. A. N., 1947.—“Overzicht der onderzoeken van het uit de praktijk ingezonden ziektemateriaal in 1945.” 72 (5), 134-139. [English summary p. 139.]
- b. BERGSMA, C., 1947.—“Een geval van taenia echinococcus bij een hond en de darmee in verband staande toekomstige bestrijdingsmogelijkheden van de echinococcusziekte bij mensch en dier.” 72 (6), 178-181.
- c. AMERONGEN, A. J. VAN, 1947.—“Over het voorkomen van de *Taenia echinococcus* (*Echinococcus granulosus*) in de provincie Gelderland.” 72 (8/9), 237-242.
- d. JANSEN, J., 1947.—“Phenothiazine in de veeartsenijkundige praktijk.” 72 (8/9), 244-249.

(158a) Among material examined at the Institute of Parasitology and Infectious Diseases of Utrecht University during 1945 the following infections were found:—Ascaridia and Capillaria in pigeons; Davainea, Raillietina, Ascaridia, Heterakis, Capillaria and *Prosihogonimus pellucidus* in fowls; *Trichostrongylus retortaeformis* in rabbits; *Hymenolepis nana* var. *fraterna* and *Cysticercus fasciolaris* in mice; *Dictyocaulus filaria* in sheep; and *Uncinaria stenocephala* in silver foxes.

A.E.F.

(158b) A pig 4-5 months old examined at the Rotterdam Public Abattoir was found to have a heavy and recent hydatid infection. Enquiries showed that the infection was in all probability picked up from a yard-dog kept by the owner of the pig. The dog had a very heavy infection with *Echinococcus granulosus*. The danger to both man and beast of dogs so infected is stressed and a plea entered for immediate and energetic measures to eliminate the hazard. No slaughtering should take place without adequate inspection and infected organs should be thoroughly destroyed. Methods for controlling dogs are also discussed.

A.E.F.

(158c) The incidence of echinococcosis in slaughter animals is increasing in Gelderland. Using data supplied by the meat inspection service, Van Amerongen was able to trace dogs infected with *Echinococcus granulosus*. He concludes that all meat, including that slaughtered for domestic use only, should be inspected since not less than 50% of the infected dogs were traced through the investigation of such home slaughtering. He also considers that human cases of hydatid should be brought to the attention of the veterinary inspectorate.

E.M.S.

159—Tijdschrift over Plantenziekten.

- a. FLUITER, H. J. DE, 1947.—“Het aaltjesprobleem in de koffiecultuur.” 53 (4), 101-109. [English summary pp. 107-108.]
- b. KLINKENBERG, C. H., 1947.—“Aaltjesziekte in aardbeien I.” 53 (4), 110-114. [English summary p. 114.]
- c. KOOT, I. VAN & WIERTZ, G., 1947.—“Onderzoek naar de afstervingsstemperaturen van enkele voor de plantengroei schadelijke bodem-organismen.” 53 (5), 121-133. [English summary pp. 132-133.]

(159a) In Java, coffee plantations suffer from infection with *Heterodera marioni*, *Anguillulina similis* and *A. pratensis*. Young coffee plants are killed or suffer badly from *H. marioni*. Soil disinfection is too expensive and infected nurseries are not replanted in the following year. The *Anguillulina* species are much more dangerous both in the nurseries and in the plantations. *A. pratensis* is a primary pest and the most noxious one. The direct methods of control in use are (a) warm water treatment of nursery plants and (b) starvation by a two-year fallow of the infected soil. Various other measures are practised to reduce the damage to the coffee trees. Conuga coffee appears to be very resistant. *A. pratensis* from the bamboo appears to be a different biological strain from that in coffee.

R.T.L.

(159b) Klinkenberg compares and contrasts the symptoms shown by strawberry plants of winter frost damage and of a non-virus hereditary condition, spring yellows, in the variety Madame Moutot, with those of eelworm disease caused by *Aphelenchoides fragariae*. During 1946, between April and November, 57 specimens of diseased or suspected plants were examined for nematodes by means of an improved funnel technique, not yet described in detail. *A. fragariae* was found in 14 cases, *Anguillulina dipsaci* in 11, and both species in two cases. In 30 specimens no eelworms were found. *Anguillulina dipsaci* occurred in April and May and again in September and October.

M.T.F.

(159c) Van Koot & Wiertz have investigated the thermal death-point of several plant pathogens including *Heterodera marioni* which, they say, can be readily killed by heating soil to 55°C. for about 10 minutes.

T.G.

160—Transactions of the American Microscopical Society.

- a. ACENA, S. P., 1947.—“New trematodes from Puget Sound fishes.” 66 (2), 127-139.
- b. PENROD, F. W., 1947.—“*Neodiplostomum banghami*, a new diplostomatid strigeoidean trematode from an eagle.” 66 (2), 144-148.
- c. ANNEREAUX, R. F., 1947.—“Two new trematodes from Philippine fishes.” 66 (2), 172-175.
- d. RIDER, C. L. & MACY, R. W., 1947.—“Preliminary survey of the helminth parasites of muskrats in northwestern Oregon, with description of *Hymenolepis ondatrae* n.sp.” 66 (2), 176-181.
- e. RAUSCH, R. & MORGAN, B. B., 1947.—“The genus *Anonchotaenia* (Cestoda : Dilepididae) from North American birds, with the description of a new species.” 66 (2), 203-211.
- f. ANNEREAUX, R. F., 1947.—“Three new trematodes from marine fishes of California.” 66 (3), 249-255.
- g. MEINKOTH, N. A., 1947.—“Notes on the life cycle and taxonomic position of *Haplobothrium globuliforme* Cooper, a tapeworm of *Amia calva* L.” 66 (3), 256-261.
- h. HANSEN, M. F., 1947.—“Three anoplocephalid cestodes from the prairie meadow vole, with description of *Andrya microti* n.sp.” 66 (3), 279-282.
- i. CHANDLER, A. C. & RAUSCH, R., 1947.—“A study of strigeids from owls in North Central United States.” 66 (3), 283-292.
- j. VAN CLEAVE, H. J., 1947.—“Analysis of distinctions between the acanthocephalan genera *Filicollis* and *Polymorphus*, with description of a new species of *Polymorphus*.” 66 (3), 302-313.

(160a) Acena describes *Lepidapedon pugetensis* n.sp. from the intestine of *Sebastodes nebulosus*, and *L. calli* n.sp. from the stomach and intestine of *Parophrys vetulus*. From *Aspicottus bison* he describes *Intuscirrus aspicotti* n.g., n.sp., a member of the Derogenetinae in which there is no hermaphrodite duct and the excretory system is asymmetrical. *Lepodora gadi* Yamaguti, 1934 is transferred to the genus *Lepidapedon*.

P.A.C.

(160b) *Neodiplostomum banghami* n.sp., a parasite of *Haliaeetus leucocephalus* in Ohio, is described and distinguished from the 34 species previously described for this genus. P.A.C.

(160c) *Hexangium secundum* n.sp., a parasite of the intestine of *Teuthis concatenata* in the Philippines, can be distinguished from the only other species of this genus by the symmetrical arrangement of the testes and by the large size of the ovary. *Hysterolecticha acanthuri* n.sp. from the stomach of *Acanthurus triostegus* can be recognized by the absence of the oesophagus, the large size of the acetabulum, and the forward position of the ovary.

P.A.C.

(160d) An examination of 34 muskrats from western Oregon revealed five helminth species, including *Echinostoma revolutum*, *Notocotylus urbanensis* and *Taenia taeniaeformis*. A larval nematode is believed to be a species of *Trichostrongylus*. *Hymenolepis ondatrae* n.sp. occurred in 12 of the muskrats. The rostellar hooks are arranged in a single circlet and may number either 8 or 10, and are of a characteristic shape which serves to distinguish this species.

P.A.C.

(160e) Rausch & Morgan review the genus *Anonchotaenia* and give a key for the identification of the species found in North American birds, together with a parasite-host list. They describe *A. quiscale* n.sp., which was found in *Quiscalus versicolor*, the common grackle, in Ohio. It is the largest species yet described ; there are nine testes in each segment. P.A.C.

(160f) Three species of trematodes from marine fishes of California are described. *Genolinea montereyensis* n.sp. from *Clinocottus analis* is distinguished by the location of the testes. *Asymphylodora atherinopsis* n.sp. from *Atherinopsis californiensis* resembles *A. diplorhynchus* but has one testis only, possesses a large seminal vesicle and the body also is large compared with other species of the genus. *Derecrema pooli* n.sp. from *Sebastodes* sp. is closely related to *D. fusillum* and *D. cholaeum* but is of larger size, has larger eggs and shows other morphological differences.

R.T.L.

(160g) The larval stages and life-cycle of *Haplobothrium globuliforme* from *Amia calva* are shown to be similar to those of other pseudophyllids and to develop in *Cyclops* spp. The advisability of assigning this cestode to the Tetrarhynchidae on the basis of its scolex alone is called in question.

R.T.L.

(160h) *Andrya microti* n.sp. from *Microtus ochrogaster* in Nebraska is described, and differentiated from *A. macrocephala*, *A. translucida* and *A. neotomae*. The two other anoplocephalid species found in this vole were *Paranoplocephala infrequens* and *P. troeschi*.

R.T.L.

(160i) One new genus, four new species and one new variety of Strigeidae are described from owls in north central U.S.A., viz., *Neogogaea bubonis* n.g., n.sp., *Strigea elegans* n.sp., *Neodiplostomum reflexum* n.sp. and *N. cochleare* var. *americanum* n.var. all from *Bubo virginianus*, and *N. delicatum* n.sp. from *Strix varia* and *B. virginianus*. The genus *Neogogaea* is differentiated from *Duboisia* and *Prosocephalus* by the thin leaf-like anterior portion of the body, and from *Gogaea* by the greater number of vitelline follicles which are entirely confined to the holdfast organ. There is said to be no justification for the separation of the reptilian members of the Cyathocotylidae into Szidatinae merely on account of their reptilian hosts.

R.T.L.

(160j) Van Cleave's studies lead him to transfer *Echinorhynchus sphaerocephalus* Bremser, 1819 and *Filicollis altmani* Perry, 1942 to *Polymorphus* owing to the fundamental difference between the holdfast organ of these two species and that of *F. anatis*. The *Filicollis* sp. from *Larus argentatus smithsonianus*, recorded by Harrington & Pillsbury in 1938, is re-described and named *Polymorphus kenti* n.sp.

R.T.L.

61—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- CAWSTON, F. G., 1947.—“The differentiation of cercariae and of the molluscs which harbour them.” [Correspondence.] 40 (6), 911–912.
- CULBERTSON, J. T. ET AL., 1947.—“Experimental chemotherapy of filariasis.” 41 (1), 18–54. [Discussion pp. 44–54.]
- ELSDON-DEW, R., 1947.—“Zinc sulphate flotation of faeces.” 41 (2), 213–216.

(161a) Cawston remarks on the difficulty of identifying the cercariae of schistosome species from other bifid-tailed cercariae, and on the need for a careful determination of molluscan intermediaries.

R.T.L.

(161b) Much of this address which deals with work on the chemotherapy of infection with *Litomosoides carinii* in cotton rats, and with *Wuchereria bancrofti*, recently carried out by Culbertson and collaborators, has already appeared in *Puerto Rico J. publ. Hlth*, 1946, 22 (2), 139–173 [Helm. Abs., 15, Pt. 5], but the number of patients treated has been increased and some of the original tabular matter has been extended to cover longer periods of observation. It is concluded that while *W. bancrofti* can be eradicated from many patients by the administration of any of several compounds of antimony or arsenic, the most promising and practical drug at present is neostibosan. Rose has also tried this treatment on three cases of *Loa loa* infection; in one case there was a reduction of the blood microfilariae by 92% in 15 months and in two cases no Calabar swellings occurred during a period of six months. In collaboration with Rose, Ortiz, Reyes & Nettel, eight Mexicans with *Onchocerca volvulus* were treated intravenously with neostibosan, 1 gm. being given on most days after the second, and eight were used as controls. Ten months later no essential difference in the number of microfilariae in skin biopsies could be seen between the treated and untreated groups, although during the treatment a marked reduction in the number of microfilariae in the skin seemed to occur. An unexpected and unexplained sensitivity to neostibosan was observed in the Mexican patients after 11 days' treatment. One death occurred which appeared to be attributable to the drug.

R.T.L.

(161c) The zinc sulphate flotation technique for the concentration of eggs in faeces has been compared with the results of direct microscopical examination of faeces, and the tabulated results show that the zinc sulphate technique has great advantages over the faecal film in cases of infection with *Ascaris lumbricoides*, *Trichuris trichiura*, *Ancylostoma* sp. and *Enterobius vermicularis*, but in *Taenia* spp. and *Schistosoma mansoni* infections the direct film gave a slightly better result.

R.T.L.

162—Växtskyddsnotiser.

- a. HOLMBERG, C., 1947.—“Potatiskräfta och potatisål i Sverige år 1946.” (1947), No. 1, pp. 5-9.

(162a) Holmberg reports that the potato root eelworm, *Heterodera rostochiensis*, was found during 1946 in southern Sweden on 400 allotments distributed in 40 parishes of 14 counties; eight of these records were new. In 1946 also, outbreaks of the parasite occurred in field crops of early potatoes in the north west of Skåne. He goes on to mention the difficulties of control and expresses the hope that alleviation may come through the use of one of the newer chlorinated hydrocarbon fumigants. T.G.

163—Veterinary Medicine.

- a. EVELETH, D. F. & GOLDSBY, A. I., 1947.—“Parasitism in feeder lambs.” 42 (6), 209-215.

(163a) In feeder lambs the removal of the majority of their worms tends to increase the rate and economy of gain. Trials with a number of anthelmintic mixtures showed that one containing phenothiazine, copper sulphate and nicotine sulphate, given in the feed or as a drench twice at a 21-day interval, was the most efficient and that the treated lambs produced the most economical gains. Phenothiazine in the feed seemed more efficient than in a drench. Arsenic trioxide and tetrachlorethylene appeared to have a toxic effect detrimental to rapid economical gains. Factors other than parasites may retard fattening. R.T.L.

164—Veterinary Record.

- a. CUSHNIE, G. H. & WHITE, E. G., 1947.—“*Haemonchus contortus* infestation in lambs.” 59 (33), 421-422 & 423.
 b. MORGAN, D. O., 1947.—“Parasitic helminths of sheep.” [Demonstration.] 59 (37), 494.
 c. OLDHAM, J. N., 1947.—“Some uncommon parasites.” [Demonstration.] 59 (37), 494-495.
 d. McLEAN, A., 1947.—“Carcase examination for *Cysticercus bovis* infection. Positive findings at Belfast Abattoir.” 59 (37), 517.
 e. ANON, 1947.—“Red-worm infestation in unweaned foals.” [Questions & Answers.] 59 (38), 531.
 f. ANON, 1947.—“Verminous aneurysm in the horse.” [Questions & Answers.] 59 (41), 577.
 g. TAYLOR, E. L., 1947.—“The ecology of nematodes parasitic in farm animals.” 59 (45), 624-625.
 h. ANON, 1947.—“Removal of round-worms from kittens.” [Questions & Answers.] 59 (49), 676.

(164a) *Haemonchus contortus* worms in lambs tend to correspond in number with the faecal egg-count and ranged from 29 to 1,288 worms in a group of 16 lambs. Probably genetic resistance and nutrition influence the effect of the worms on the host. Lambs on good pasture were found to carry up to 1,000 *Haemonchus* without adverse effects on live weight or haemoglobin level. R.T.L.

(164d) Of 2,000 carcasses examined for *Cysticercus bovis* at the Belfast Abattoir, six were positive. In each case a single cyst was found embedded in the left masseter muscle. R.T.L.

(164f) Aneurysm of the mesenteric artery due to *Strongylus vulgaris* can be diagnosed by rectal examination. R.T.L.

(164g) Taylor discusses the factors which enable nematode parasites and their hosts to live together with reference particularly to the trichostrongylids of grazing animals. The establishment of immunity in growing animals marks the point at which mutual adaptation of host and parasite is reached and the continuity of both is safeguarded. The occurrence of disease arises from an abnormality in this host-parasite adjustment and indicates as much a disease of the parasite community as of the host. Webster's classification of epidemics into three types is shown to be applicable to helminth infestations. The processes of adjustment are delayed as compared with bacterial infections owing to the slower growth of helminths and the rate of increase of these infestations. The strong resistance of the adult host combined with the high rate of parasite egg production ensures the stability and continuity of the host-parasite relationship. R.T.L.